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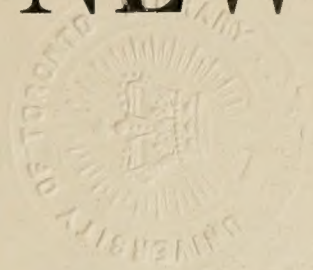


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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House

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OUR ILLUSTRATIONS.

Detail of the Main Entrance to the Imperial College of Science and Technology, Prince Consort-road, South Kensington, S.W. Sir Aston Webb, K.C.V.O., C.B., R.A., F.S.A., Architect.

"Urania." Royal Academy Silver Medal and £25 Prize Cartoon of a Draped Figure. By Mr. James Williams.

Royal College of Art Travelling Studentship in Architecture: Restoration of the Temple of Jupiter Olympius, Athens. By Mr. W. G. Jones. Plan, Details of the Order, and View.

Staircase in the Archbishopal Palace, Alcalá de Henares, Spain. Alonso de Covarrubias, Architect. Drawn by Mr. Maurice B. Adams, F.R.I.B.A.

Edinburgh College of Art: Restoration of the Temple of Diana, Ephesus, a.c. 330. By Mr. J. Scott Lawson.

New Bronze Doors, Milan Cathedral. By Professor L. Pogliaghi.

AGE QUOD AGIS!

Readers must accentuate the old adage for themselves. May we all do so rightly on this first day of the New Year that begins amid the sternest reminders of our duty, but, thank God! with the clearest indications of its method of accomplishment, if only they are rightly apprehended. With most of us, we trust certainly with the manhood of Britain—there is no shadow of uncertainty to-day, on land or sea, in regard to the interpretation thereof. In daily peril, against odds the most intrepid might envy, they do that which they are doing with all the dogged determination of their race to win through, as we know they will.

Have we here at home, kept scatheless by their valour, the faintest temptation to misread the message? Are we to content ourselves, like slackers and cowards, with mere day service, doing our share as some of us have done it heretofore? Is it henceforth to be, "Do that which we are doing," or merely "Do that which we have been doing," after the fashion of the slaves of necessity, and not in emulation of the heroism of that thin red line beyond the narrow seas that for five months has kept the disturbers of Europe at bay?

If really we are worthy of those who indeed do that which they are doing with self-devotion and self-denial never surpassed in our history, then the New Year will beyond our doubt witness a revival of energy that will compel success for each and all of us. "Business as usual" was a good cry enough five months ago. To-day it must be "Business as it might be!" If that taxes the strength of some of us beyond endurance, who and what are we that we should forget that it is as much the bounden duty of the merchant or the craftsman to die at his post as the soldier's, if needs be?

In our own section of the great army of the workers, so far, there has been no lack of courage. We have never felt prouder of our own readers than during the past half-year. Our pages bear us witness that, in spite of dull times and the demands of the war on many of the best workers in our art, never has this journal been so generously helped, week by week, to maintain its interest and reputation as the representative of those whose best work it is its mission and privilege to mirror and record. We miss, indeed, some of our best; but they will return ere long to take up their work, amid the congratulations of their fellows and the plaudits of the whole nation. Not all?

"Who whisper'd of the dead?"
—Hush, boding voice, be still;
They shall have their meed ere long,
And a song all hearts to fill."

and those of us with them who fall at

home by the wayside in the stern but needful struggle to do that which we are doing with all our hearts and with all our strength.

For that alone will end the struggle and bring back that we all desire. At that great feast, kept, like our own, in the safe refuge and amid the dear influences of the home, by our Jewish brethren, who are so nobly taking their part in the battle against barbarism, a pathetic aspiration breaks the silence that follows the simple domestic ceremonial. "Next year in Jerusalem!" To-day, as we miss dear faces at the New Year gathering, we may surely murmur to each other, as our hearts' desire for their safety and welfare mingles, "Next year in Peace!" and that then we may all continue to "do that which we are doing" to such good purpose that solid and real prosperity shall bless us for long years to come.

And a "New Year's Number" of our own, still more worthy of its predecessors and their helpers. If to-day we are content, in some measure, to give a little less in quantity than in former years, we are thankful that the quality is of the best. Those who have made it so, and those who, with us, are their debtors, will, we think, agree that we have all better met the general wish than if we had demanded an extra price for our "New Year's Number," which the necessities of the times might have dictated; and to any advertisers we have been unable to spare extra space for we tender our regrets. Most of them have stood so well by us during the somewhat trying weeks of the recent past that we hesitated to press them to add unduly to their expenditure at a time when the many calls on all of us dictate economy of resources. When architecture again flourishes, and the building trades are as prosperous as they deserve to be—and it is still our firm conviction that this will be so as soon as the war is over, for more than the many reasons we have lately striven to set forth—may we all continue to "do that which we are doing" joyfully and indefinitely!

THE SUPERVISION OF WORKS.

WORK BELOW GROUND.

The first duty of the supervising architect is the examination of the bottoms of trenches. He will possibly before this have met the contractor to arrange as to the setting out of the building; but, excepting for this and any prior visit to inspect material early delivered, he might take holiday from the commencement of the opening of ground until the proposed foundation is laid bare. He will, of course, have instructed the contractor not to lay a yard of concrete until the bottoms

have been "passed" as satisfactory. Here is a chance to test his promptness of decision; for he cannot keep the works everlastingly delayed until he makes up his mind as to the suitability or otherwise of the soil upon which his structure is to be reared. Fortunately, in these days of steel reinforcement, he can, if prompt, construct at the eleventh hour a virtual girder, and bridge over doubtful places. Backbone can thus be given to lengths of concrete under footings by mere insertion of properly-disposed steel tension-rods, joists, and the like. Whatever the recourse, whatever the "extra," the young architect's aim should be to secure a good foundation—unyielding, if possible, but otherwise equally yielding at all points. We all found on old Mother Earth. The true foundation is, therefore, the earth's surface at the bottoms of trenches. The under side of the lowermost footings may be termed the plane of artificial foundation. Up to this plane we should bring up all, preferably in solid concrete; for where foundations are stepped greatly, with a uniform depth of concrete, greater shrinkage of brickwork occurs than where the concrete is at a higher level.

If possible, excavations should be inspected on dry days, when the bottoms and earth sections may be better judged than where the lower sinkings are a mess of water and sludge. The foreman may endeavour to assure the youthful supervisor that all is well, and the contractor that all is better than the best. But here caution and consideration, with self-reliance, are greatly needed, for it may, and very probably will, be that the lowermost excavations have been made in the endeavour to find a better foundation, and contractors and their foremen are always anxious to get rid of excavating work and make a start on actual building operations. The architect here needs firmly to hold his own, and the inexperienced to exercise every caution. Whilst ground is open, now is the time to act with decision, in full realisation of the terror of rotten foundations. It is not everyone who, like a purchaser, came with great enthusiasm to the writer, saying that he had bought such a cheap house—"it only wanted under-mining." We did the work in 3ft. depth, and the purchaser paid the bill.

There is one practical aid to encourage good work below ground—provide the builder with a very carefully-drawn "foundation plan," showing every footing course most exactly delineated. To our mind, elevations look better with footings and concrete drawn below. A very accurate and thorough plan of foundations must necessarily have a certain moral effect. It is a silent admonition to the foreman that square-cut and levelled trenches, solid and

true footing courses, on accurately surfaced concrete, are expected. Footings—so often, in inferior work, thrown together—are of obvious importance, distributing the weight of walls on the concrete; and where we see neat, solidly-built footing courses, we may judge that influences are at work which foreshadow good, substantial brickwork in the superstructure.

The supervising architect will inspect and pass (a) the bottoms of trenches, (b) the concrete before footings are laid, and (c) the footings complete. Whatever else he does, he will not neglect these matters, or to pre-advise the builder that such works "completed" must be approved. We here lay perhaps unusual stress on the footings, but believe that the inexperienced will do well to follow our recommendation, because footing courses thrown together with dabs of mortar do not serve the office of feet—distributing weight. Moreover, to insist on good work that will ultimately be buried is a plain hint that we shall require good work above ground. Below-ground work in building is of quite special importance, needing constant and prompt supervision. Upon its satisfactory execution depends the stability of the superstructure. If there is complete failure, no remedy is available, while we may safely assume that no architect ever underpins his own building. He will not be offered the chance.

Where a preliminary contract is arranged for below-ground work, this may at times give an opportunity for green foundations to consolidate, and be all in favour of security. All work below ground-level, and a few courses above, in blue brick and cement is expensive; but in many circumstances a double insurance against trouble, for such work, besides being fairly damp-resisting, may, if not broken into by large openings, greatly strengthen the substructure considered as base to the superimposed building, and such might often be resorted to where after-consideration suggests the idea that the matter of trench-bottoms and foundation proper have been rather hastily settled. In below-ground works, unless the matter is arranged on the perhaps not quite frank and open method of substantial reserve sums in the bill of quantities, the avoidance of extras is difficult. The youthful supervisor here needs to stiffen his back—to face below-ground extras boldly and squarely, the momentary irritation of his client being negligible beside actual failure in foundation. These are all matters testing judgment under circumstances suddenly revealed. In all cases it is a matter for promptness in decision, based upon sound principles of action. The experienced do not hesitate, but make, at all costs, for safety and stability.

The struggle against water invading the completed structure commenced immediately with actual building operations. Architectural beauties never yet compensated for errors and mischances leading to damp cellars, leaky roofs, or smoky chimneys. The effectual remedy for damp basements is a vertical, all-enclosing stratum of genuine asphalt continuous, it may be, with the dampcourse—and the supervisor should inspect this work before any filling-in of earth.

In soils having here and there uncertain spots, depth of concrete is the simplest recourse; but reinforcement is a modern method. It is not here so much a question of distributing weight as transferring it to reliable positions. For really treacherous ground the continuous, reinforced raft, spreading all weight over a wide area, is the best method of securing an artificial foundation. The most ordinary failure, however, is in starving depth; so that the

remedy, where bottoms are to be viewed with suspicion in view of surroundings and known local characteristics, is in the simplest—the least complicated—cases, depth of concrete. The bargain house above referred to failed for lack of depth of foundation and cross-area of concrete at, no doubt, a trying season—for it was at Norwood, in a district a veritable hot-bed of slippery clay-foundation trouble. It is always the exceptional circumstance and event that we need to guard against, and depth of concrete well down is the simplest precaution. Prolonged absence of rain finds out weak spots where we should not expect to look for them. Well down on a chalk bed hundreds of feet thick seems good enough for anything; but in the Isle of Thanet, two bays of a farmhouse that had stood as one with the main structure for some forty years failed dismally in an exceptional drought (the farm well, 150ft. deep, ran practically dry), and had to be reconstructed.

Where we know the neighbourhood and subsoil, we can draw on our plans often a definite thickness of concrete, and let things go at that confidently; but where we do not know, we always need caution. The young architect will do well to rid his mind of any notion that the concrete foundation he shows on his sectional drawings by habit, and too seldom on special foundation plans, have any reference at all to that which will be actually needed. We mention this because no doubt an impression often exists in the minds of the inexperienced that it would be nice to have all carried out as drawn, and the fear of extras and effort to struggle against these from the first, leads to weak handling of the most important of the duties of a supervisor. The folly is obvious. The older man will regard his certain proposition as that only above the lowest footing courses.

THE AMERICAN INSTITUTE OF ARCHITECTS.

FORTY-EIGHTH ANNUAL CONVENTION.

The forty-eighth annual convention of the American Institute of Architects was held at Washington, D.C., on Dec. 2, 3, and 4, 1914. There was a total attendance of 144 members, as delegates and alternates, as follows: Chapter delegates, 128; ex-officio delegates, 14; past-presidents, 2; Mr. Irving Pond, Mr. Walter Cook, and Mr. Cass Gilbert.

Upon calling the convention to order, the President, Mr. R. Clipston Sturgis, delivered the following address:—

I cannot speak to you to-day except in the light of the trouble which casts its shadow over us all. Nations—people—individuals, to whom we owe much, whom we admire, whom we love, instead of working together for the advancement of art, science, and industry, and of, above all, our religious ideals, are testing the strength of modern armaments, and, on each side, giving freely of all that makes life precious and lovely—giving also life itself, for ideals. Instead of advancing side by side towards a common goal, they are attempting, by force, to establish ideals—of national growth—of national prosperity—of national honour. One only of these is worth fighting for. We stand outside—we look on—there must be something to be learned here. Are we ready and fit to receive the lesson?

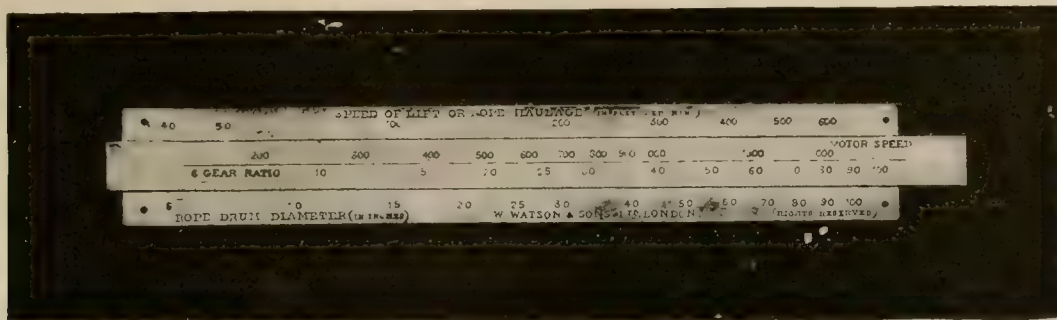
Our debt to those nations in all that goes to make up our complex civilisation is enormous. In science, in research, in industry, in the arts, in the power to govern through sympathy, we have learned nearly all that we put into practice as a people, from these our fathers. Many nations have contributed to our national life, and to all we are closely bound by ties of blood and by debts of gratitude. Only through sympathetic understanding and mutual for-

bearance can we hope to work out a great future.

As this, our country, is a complex community, and yet indissoluble, so is architecture, above all other arts, the complex art, and, at the same time, the common art which belongs, of necessity, to every human being. Architecture is not one art; it is many. Architecture is not an art only; it is also a science and an industry. For the fulfilment of all this, many and different qualities are required. There are diversities of gifts, but one spirit. All the gifts must be exercised with the one spirit, the single aim toward the perfection of the final result as an expression of the fine arts, as an example of sound and perfect construction, as a practical solution of an economic problem. It is because of the diversity of gifts required that an architect can never claim authorship for his work, as can the painter and sculptor, and for this very reason he must have sympathetic understanding and a willingness to work with others. Behind all must be integrity of purpose, uprightness, and absolute honour. Very especially then may we who practise this complex art turn with loving sympathy towards those to whom we, in especial, owe so much, and try to learn the value of gaining our ideals in the right way. Force is the court of last appeal. Only when all else fails is force justified. To avoid the use of force every effort should be made to adjust differences by honestly trying to see both sides—to avoid differences by seeking, first, the points of agreement—by the exercise of sympathetic understanding. Long ago one who tried earnestly to take such an attitude, said: "That there should be no schism in the body; but that the members should have the same care one for another."

To insure the harmonious working together of all, this Institute was established more than fifty years ago, in a very small way, in a single Eastern centre. Twenty-five years ago it joined hands with the Western society, and so doubled the influence of both. Now it reaches across the continent—east, west, north, and south. Even now, however, its influence does not begin to be what its importance warrants. There is not a state, a town, or an individual that is not vitally interested in good architecture—the fine art—the sound construction—the good business investment; and yet our public bodies and our private individuals know very little about the subject—some know a little of one or another of the three phases—few know it in its completeness. It rests with individual members of the Institute, as well as with its organisation, to establish and maintain high standards in all. The individual will always be looked upon as an interested, and, therefore, not unprejudiced, adviser; but the Institute is impersonal and disinterested, and here lies the real strength of the organisation. In all that the Institute has done in the establishing of better standards, it is the impersonal, unselfish attitude which has carried weight, and this will always be true, if it is understood; but a public accustomed to expect interested motives must be convinced that the aims of the Institute are disinterested, and this every individual can help to do.

Take four examples: The Schedule of Charges is established to insure the right kind of professional service, by removing the temptation to poor, worse still, dishonest service, which an inadequate payment invites. The standard of service thus established is of real value to the owner. The circular on Competitions has been issued to insure the owner's receiving what he has a right to expect when he institutes a competition—namely, a choice among the best that architects can offer. Under old systems a competition was a lottery for the owner, as well as for the architects, and capable men and busy men did not care to enter. There were, and there always will be, applicants for these lottery tickets; but it is not to the advantage of the owner either to buy them or to receive them for nothing. The code of ethics has been established to set a standard which shall bind all members of the Institute, and influence



Walker's Slide-rule.

all practising architects to deal honestly and uprightly with the owner, as well as with their fellow architects. The committee on education has shown the unselfish attitude of the Institute in encouraging and fostering architectural education, not only in the schools, where the well-to-do can afford to study, but in the ateliers and clubs where draughtsmen, unable to afford the schools, can prepare themselves for a fuller and better service.

In each of these four a reverse side is claimed. The schedule—an attempt to fix high rates for the benefit of the members of an organisation. The competition circular, to limit competition and keep the work in our organisation. The code of ethics, to eliminate those who might otherwise encroach on our field. The education of the draughtsmen, so that they will remain draughtsmen, but be of more service to us. These latter are *not* the aims of the Institute, and every member in his practice and in his dealings with the owner will see that his example makes this clear.

In architecture, more than in any other profession, co-operation is the keynote, and this must be based on mutual understanding. Those who work together and realise their interdependence must, necessarily, be humble. Neither one's successes nor, thank God, his failures, are wholly attributable to the individual, and, knowing this, one will hesitate before judging. There are an infinite number of pitfalls for the architect, who is expected to know something of so many things. The things required of the architect are many and diverse. He is a creative artist—a master of building construction—an engineer, and a business executive. In all his work the emphasis will come on one or another of these four. There are men who represent, primarily, each one. There is the shrewd business man, with his real estate and Press agents, his promoting activity, his judgment in selecting his men, draughtsmen and engineers, to carry through his work, construct, equip, design his buildings. There is the engineer who, occupied primarily with "problems" of engineering, adds an architectural draughtsman as a side-issue, and finds he can obtain and execute work in which planning, construction, and design are all as important as engineering. And, finally, there is the creative artist, whose sole interest lies in his imaginative art, and who treats construction and business administration as a side-issue. All these exist, and all are incompletely equipped, and render imperfect service as architects.

There are also men who might fairly be classed as eminent in more than one branch of the profession; but the man who can perform all the service rightly demanded of an architect, and do it all well, does not exist. For this reason, architecture, in its most complete and perfect sense, must be composite work, in which all phases are considered and given their true importance. To determine fairly who may, in justice and right, term himself an architect is the problem that confronts those who have the duty of licensing architects. Possibly only those deserve the name who recognise clearly what they do not know, and have the judgment to put such work into the hands of men who do. A more careful consideration for the claims of others who, rightly or

wrongly, practise architecture, might lead to a different attitude towards qualification for membership in the Institute. A well-trained landscape architect who begins to practise architecture at once qualifies for a nomination for the Institute; an engineer who makes a partnership with an architect similarly qualifies. Many engineers practise architecture who, in executive ability and knowledge of construction, can render as effective service along many lines as a man who is, without question, an architect. These matters are worth considering, for they indicate that architecture is complex, demands for its perfection many minds, many qualities, and, above all, consideration of the claims of others. As the Institute recognises and upholds complete and perfect service, so will the public, quick to appreciate good work, recognise what the Institute stands for. Let us not rest on promises; let us press forward to performance.

The second day's proceedings saw the continuance of the presentation of committee reports, and the balloting for the election of Officers and Fellows of the Institute.

The officers elected were: President, R. Clifton Sturgis, Boston; First Vice-President, Thomas R. Kimball, Omaha; Second Vice-President, D. Knickerbacker Boyd, Philadelphia; Secretary, Burt L. Fenner, New York; Treasurer, J. L. Mauran, St. Louis.

The following were elected directors for terms of three years: Charles A. Coolidge, Boston; Chas. A. Favrot, New Orleans; Elmer C. Jensen, Chicago; John Hall Rankin, Philadelphia.

Fellows were elected as follows: J. Lawrence Aspinwall, Prescott O. Clarke, Edward A. Crane, William B. Faville, William K. Fellows, Ernest C. Klepstein, Samuel S. Labouisse, Benjamin J. Lub-schez, L. C. Newhall, Fernand Parmentier, Egerton Swartworth, Charles C. Wilson, and Nathan C. Wyeth.

One of the features of the second day's proceedings was the discussion of the report of the Committee on Competitions. In its report the committee expressed its firm opinion that the existing circular and Standard Form of Competition Programmes establish no conditions which are not equitable to all concerned, and which should not be required by both owner and architect before any business obligation is undertaken, and, therefore, urged the convention to make no changes in the regulations governing the manner of conducting competitions.

The report then went on to state, and it was this statement that marked the subject of the subsequent debate: "It is equally clear to your committee, however, that the amount of commission to be paid a successful competitor is wholly unrelated to, and is not part of, any argument for fair play or equitable conditions in arranging a competition programme with an owner." The committee offered the following resolution: "Resolved, That this convention makes no changes in the existing forms of 'The Circular of Advice on Competitions' and 'The Standard Form of Competition Programme', with the exception of the omission of any specified fee to be paid the successful architect."

The discussion of this report was temporarily suspended until the report of the

Committee on Schedule of Charges could be presented and its features discussed. This was done at some length, with the result that the resolution offered by the Committee on Competitions was approved by a close vote.

The recommendation of the Committee on Schedule of Charges, that no changes be made in the schedule except such as might be necessary to its proper interpretation, was carried.

The report of the Committee on Chapters contained many suggestions for radical changes and revision of the constitution and by-laws. The more important features of this report deal with applications for membership, a simplified mode of elections, provisions that will eventually secure chapters composed of Institute members only, and a provision for a standard form of chapter constitution and by-laws.

The gold medal of the Institute, the highest honour that it confers, was presented to Jean Louis Pascal, of France. M. Pascal was unable to receive this medal in person, and was represented in its acceptance by M. Jules J. Jusserand, the French Ambassador.

M. Jusserand, in his speech of acceptance, on behalf of M. Pascal, referred to the inherent artistic nature of the French people, claiming that, even the prehistoric dwellings of the cave men of France bore evidence that the earliest inhabitants of the country were artists. In concluding his remarks, M. Jusserand stated that, in the presentation of the Institute medal to Pascal, America had paid one more tribute to the French spirit of youth and beauty.

The usual banquet, very largely attended this year, was held on the evening of the last day, and brought the forty-eighth annual convention to a successful close.

WALKER'S SLIDE-RULE.

To engineers and draughtsmen who have the designing or application of worm-gearing to the varied uses to which it is put to-day, such as rope-haulage, lifts and hoisting machinery, etc., the above illustrated slide-rule should appeal as a very useful tool.

The four necessary factors—namely, worm or motor speed, gear ratio, diameter of hauling-drum, and rope speed—are so set in relation to each other on the four scales of the rule, that by movement only of the central sliding portion the desired result can be seen at a glance, and all the alternative combinations possible to obtain it.

For example: supposing it is desired to construct a motor-driven worm-gear to give a rope-haulage speed of 190ft. per minute, and assuming, too, that the drum diameter should be 39in., then, if a suitable motor speed be selected—say 650 revolutions—and this speed on its scale is brought opposite the haulage speed, the required gear ratio can be read off opposite the selected drum diameter. It will be seen in this example to be 35 to 1.

Or if the gear ratio be known, and is placed opposite the drum diameter, then the required motor speed will appear opposite the selected haulage speed.

This rule will be found to be a great time-saver, besides preventing the likelihood of mistakes with the usual method of calculation. It has been designed by Mr. Cecil Walker, and can only be obtained from the

makers (see below). It is neatly made of hardwood and celluloid, with the lines clearly and accurately marked, and is supplied with a black case convenient for the pocket (size about 8in. by 1½in. by ½in.) The price, for cash, is 15s. net., post free in United Kingdom, of Messrs. W. Watson and Sons, Ltd., 313, High Holborn, London, W.C.

OBITUARY.

Mr. William Newton Dunn, F.R.I.B.A., of Messrs. Newton Dunn and Son, architects and surveyors, 1 and 2, Bucklersbury, Cheap-side, died on December 23 at his residence, Glenfealen, Wray Park, Reigate, in his sixty-seventh year. He was the eldest son of the late Rev. T. H. Dunn, of Portland House, Tenby, and joined the Royal Institute of British Architects as an Associate in 1882, becoming a Fellow in 1906. He carried out a large amount of work in the City. The funeral took place at the parish church, Reigate, on Monday afternoon.

The death is announced of Mr. Frank Sumner, engineer to the City of London Corporation. Mr. Sumner, who has long been away from his office, owing to illness, was elected in 1905, succeeding Mr. D. J. Ross. He was previously borough engineer and surveyor at Woolwich, and previously to that acted in a similar capacity at Bermondsey. Many improvements, including the better lighting of the streets in the City, has been carried out during his tenure of office.

Colonel John Chadwick Doveton, who died at Bath on Tuesday in his seventy-sixth year, entered the Indian Army in 1858, and was one of the pioneers of the movement for the protection of Indian forests, first systematically undertaken in 1864. Colonel Doveton spent his life in forestry administration in the Central Provinces. He reached the grade of Conservator in 1868, was gazetted colonel twenty years later, and was placed on the unemployed list in 1896.

Mr. David Balfour, Member of the Institution of Civil Engineers, of Myre Hall, Houghton-le-Spring, died on December 22, aged seventy-six years. He was born at Dundee in 1938. He was a Member of the Institution of Civil Engineers, Fellow of the Geological Society, and also a Fellow of the Royal Meteorological Society, and carried on the profession of a civil engineer in Newcastle, being the senior partner of the firm of Messrs. D. Balfour and Son, whose work has been carried on for a number of years by his son, David Balfour, jun., M.Inst.C.E. He served his pupillage with Mr. John Fulton, C.E., late city engineer of Dundee and Newcastle, and came to England fifty-one years ago, when he was appointed engineer to the Sunderland and Houghton-le-Spring Highway Board, and latterly acted for the Houghton-le-Spring Rural District Council. He contributed a number of papers to different scientific societies in both England and Scotland.

COMPETITIONS.

DUNFERMLINE. The Carnegie Dunfermline Trustees recently invited architects to send in competitive plans for model cottages, and the awards have now been made public. The most suitable plan is considered that of Mr. Burnett N. H. Orphoot, 25, Queensferry-street, Edinburgh, whose plans have been adopted. The other awards made are as follows: Mr. Gavin Paterson, Cadzow-street, Hamilton (£15); Mr. William Birrell, Parish Council Buildings, Dunfermline (£10); and Messrs. D. and J. R. Macmillan, 105, Crown-street, Aberdeen (£5).

The Scarborough Corporation are seeking a Provisional Order to borrow money for the construction of sea water swimming and other baths and to advance to the Harbour Commissioners, in addition to £20,000 which they now have authority for other sums. They are also applying for sanction to borrow £10,000 for the construction of a bathing pool in the North Bay.

Our Illustrations.

ROYAL ACADEMY PRIZE SILVER MEDAL: CARTOON OF A DRAPED FIGURE. "URANIA."

The prize of £25 and Silver Medal was awarded to Mr. James Williams, of 9, Camden Studios, N.W., for this excellent cartoon, and we are indebted to him for the following note on his design: "Urania," the Muse of Astronomy, is represented holding a crystal sphere, symbolic of the planetary system, in which are seen reflected the stars of the Northern Hemisphere. The composition of the design was governed by the assumption that what was required was a panel complete in itself. The artist wished to produce, not a school exercise, but a practical cartoon, suitable for carrying out as a decoration in the hall of an astronomical or other society, either as a painted panel or a coloured relief. In the drawing an endeavour has been made to avoid the falsehood of photographic realism, for in such work, if it is to be compatible with the exigencies of decorative treatment, the rendering of light and shade is of necessity arbitrary—at least, so far as is in keeping with accurate draughtsmanship.

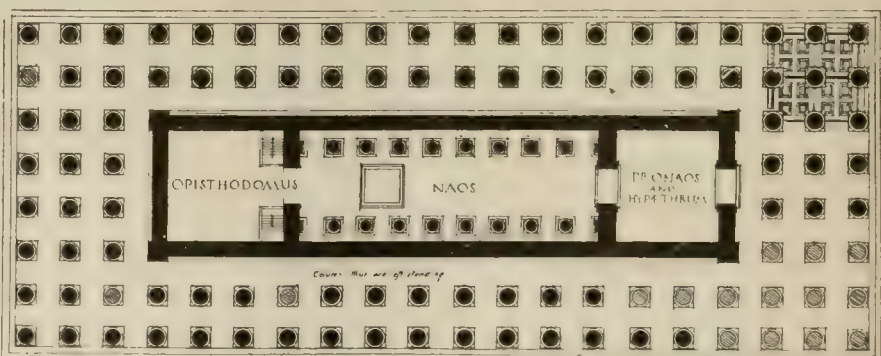
IMPERIAL COLLEGE OF SCIENCE AND ROYAL SCHOOL OF MINES.

The new buildings for the Imperial College of Science include the Royal School of Mines, Metallurgy, and Geology, and the extension to the Central Technical College in Exhibition-road, and are erected on sites given for the purpose in Prince Consort-road and Exhibition-road by the Commissioners of the '51 Exhibition. The portion shown is on the corner site of Prince Consort-road and Exhibition-road, and extends from the late Alfred Waterhouse's building for the Central Technical College to the late Sir Arthur Blomfield's building for the College of Music. It includes the Mining, Metallurgical, and Geological Departments of the Royal School of Mines and the Engineering Extension of the Central Technical College, the gift of the Goldsmiths' Company. The Mining Department includes a mining shed,

museum, chemical and research laboratories, rooms for palæontology, petrology, mineralogy, rock-cutting, and economics laboratories. The extension of the Central Technical College, known as the Goldsmiths' Wing, provides for a top-lighted structural laboratory, an hydraulic laboratory going through two floors, also a laboratory for railway engineering, rooms above for marine engineering and naval architecture, railway engineering, aeronautics, surveying, etc.; drawing offices and lecture theatre. Ample arrangements are made for lecture theatre, classrooms, and drawing offices for specialised study in advanced work in connection with structural engineering. This work is under the direction of Professor W. E. Dalby, the Dean of the College. The plan of the building is in equal bays in units of 12ft. each, the partitions being movable, so that these rooms can be altered, enlarged, or reduced, as the exigencies of the teaching staff require. The principle of units has affected the external elevation, which is kept simple, and depends for its effect upon the repetition of features and a continuous horizontal cornice. The power for running most of the machinery, which is very considerable, is electricity, and the heating is by hot water. The elevations are entirely of Portland stone; the superstructure was erected by Messrs. Kilby and Gayford, while Mr. H. W. G. Tanner is the clerk of works; the lifts by Messrs. Waygood-Otis, Ltd., and the faience by Mr. A. Whitehead, of Leeds. The architect is Sir Aston Webb, K.C.V.O., C.B., R.A., F.S.A. We gave a sketch-view and plans of the building in our issue of July 16, 1909, and the façade and plans in that of May 5, 1911.

ROYAL COLLEGE OF ART TRAVELLING SCHOLARSHIP DRAWINGS. 1914: THE RESTORATION OF THE TEMPLE OF JUPITER OLYMPIUS, ATHENS.

This restoration, of which we give two illustrations from this prize set of drawings and a plan, is based on Penrose's researches of 1884, which proved the temple to have been octastyle, with two rows of twenty columns on the flanks, and three rows in front and rear. The foundations show that the cella was divided into three portions,



PLAN

ROYAL COLLEGE OF ART TRAVELLING STUDENTSHIP IN ARCHITECTURE: TEMPLE OF JUPITER OLYMPIUS, ATHENS. As restored by Mr. W. G. JONES.

200ft. by 120ft., in which is fitted up, under the advice of Mr. Walter McDermott, two complete, full-size mining plants, the whole of the equipment being provided by the Bessemer Memorial Committee, and is said to be the most complete in the country. At the end of this shed are the metallurgical furnaces, and over it the assay laboratory. The further accommodation for metallurgy consists of a lecture theatre, advanced laboratory for electric metallurgy, pyrometry, specialised assay laboratory, micrography, professors' rooms, classrooms, etc.; accommodation for mining, two large lecture theatres, museum, drawing office, departmental library, classrooms, and workshops. The accommodation for geology comprises lecture theatre, three large drawing offices,

the naos in centre having a row of columns on each side and a statue near the west end, being the usual arrangement of a Greek temple. The naos, which is supposed to have been covered with a semicircular vault supported on the columns, was lighted from the hypæthrum beyond, which may have been open the whole, or only part of, its length. Of the 104 columns which formed the portico and peristyles of the completed temple only sixteen remain now standing, of which thirteen are in a group at the south-east corner. The isolated columns near the west extremity occupy a position not far from the original length. The temple, which measured 135ft. by 354ft., was built in the centre of a peribolos measuring 424ft. by 680ft., situated in the plain to the south-

east of the Acropolis. The columns, which are on a gigantic scale, are much stouter than usual in the Corinthian Order, measuring 56ft. in height, the lower diameter being 6ft. 4in., giving a relation of diameter to height as 1 to 8.6. The capitals, which are over 6ft. in height, and of a peculiarly beautiful and refined type, belong to the design by Cossutius, being much too pure in style to have been executed under Augustus. Only a portion of the architrave now remains, the rest of the entablature being restored from a fragment found on the Acropolis. The temple was designed by Cossutius, a Roman architect, and built by Antiochus Epiphanes in 174 B.C., on the foundations of an earlier Doric temple. The temple, as designed by Cossutius, was left incomplete, the work being resumed in the time of Augustus, its completion and dedication reserved for Hadrian. Penrose says that among all the remains of antiquity there is no ruin more impressive than that composed by the gigantic columns of this temple, and, according to Vitruvius, it almost arrived at the rank of one of the Seven Wonders of the World. The perspective, which is taken from the stylobate, looking towards the Acropolis, is intended to give some idea of the effect of such a forest of columns.

W. G. E. JONES, A.R.C.A.

STAIRCASE. ARCHIEPISCOPAL PALACE. ALCALA DE HENARES, SPAIN.

The details of this Palace of the Archbishop of Toledo combine the characteristics of two or three centuries, and represent an epitome of Spanish art, which borrowed freely from other lands. The patio of this building is by some authorities thought to have been the work of Domenico of Florence, who was the artist imported from Italy to carry out the monument of Cardinal Cisneros, the ecclesiastic who ranks as the Wolsey of Spain. His tomb is in the grand chapel, built by Gil de Outanon. Cardinal Fonseca probably erected the patio of this palace, and the architect, according to Sir Digby Wyatt, who knew what he was writing about, was in all likelihood Alonso de Covarrubias. Though architects from other lands were from time to time imported into Spain for special work, it is clear that in spite of all this the result attained is almost always singularly national in its character. The Archiepiscopal Palace is commonly described as Plateresque in style; but the parts which cause the building to be thus designated really suggest a more forcible reminiscence of good cinque-cento work, founded upon purer Italian models, and the carvings here were chiefly executed evidently by Spaniards. The staircase is very free in style, both picturesque in design and suggestive in form, while the diversity which distinguishes the scheme adds vastly to its interest, and for this reason is chosen for to-day's pencil drawing. The bell shape of the capitals and their boldly-projecting crisp effect is to be noticed in conjunction with the composite compilation of their parts. The acanthus leaves, where introduced are finely drawn and carved. Regular as well as more fancifully treated egg-and-tongue mouldings serve to enrich the arches and other features of the building, which is possibly of about the date attributed to it—viz., 1534. The palace exterior seems earlier, and has a castellated air about it from the outside, and is distinguished by a fine square tower, originally connected with the town walls, which were incorporated in the building. The façades are quite plain below, and above, under the embattled parapet of the tower, a series of turrets are quaintly corbelled out, one on each angle, and one intermediate turret on both of the external sides of the tower resting on machicoules. The lantern above, in the centre of the tower, rises over the ramparts in a singularly picturesque fashion. The palace has three quads. There are some very remarkable windows in one wing, with marble shafts set one in front of the other, and the work is carried out in masonry, with radiating or with intercrossing lines of traceries fancifully conceived. The walls

are faced with brick. One of these windows will be found illustrated in George Edmund Street's well-known standard book on "The Gothic Architecture of Spain." The carved and coffered wooden ceilings of the five magnificent apartments of this palace, which were carried out by Berruguete, are still in a splendid state of preservation. Admirable detail drawings of some of them are given in "The Renaissance Architecture and Ornament in Spain from 1500 to 1560," by Mr. Andrew N. Prentice, whose charmingly got-up folio was published by Batsford in 1893. The author also includes a geometrical drawing to good scale, illustrating the patio of this palace, which somewhat resembles the patio of the Hospital of the Holy Cross at Toledo, especially the balustrade and staircase. Alcala de Henares is located about sixteen miles from Madrid, and as one nears the town it presents a singularly prepossessing appearance, with its four churches and the Colegio Mayor de San Ildefonso, which is quite the finest building in the town; but the place, as a whole, is disappointing, and on a nearer acquaintance seems unprosperous, and bears considerable evidence of decay and neglect. Cardinal Ximenes' famous University was founded by him in 1510, when he richly endowed this seat of learning. The churches of the town for the greater part belong to the 17th and 18th centuries. The leading one is dedicated to SS. Just y Pastor. For scale and bigness this building is much admired. It is the design of Pedro Genniel, whose work, however, is not particularly interesting. There are six pulpits in this church: two at the entrance to the choir, for the epistoler and gospeller; two at the west of the crossing, and two more opposite each other against the second column from the west of the nave. There are two organs, one on either side, over the coro. This church likewise, we may add, contains a curious and uncommon small chapel, roofed with a rich and delicate Moorish plaster ceiling, very elaborately coloured. It is about the same date as the rest of its surrounds—say 1497 to 1509 A.D.

EDINBURGH COLLEGE OF ART.—MR. J. SCOTT LAWSON'S RESTORATION OF THE TEMPLE OF ARTEMIS AT EPHEBUS, ASIA MINOR, B.C. 330: DIANA OF THE EPHESIANS.

"This temple occupied the site of two previous temples, both of which were destroyed. The last temple, the greatest and loveliest of all temples of the Ionic style in Greek architecture, was erected in the time of Alexander the Great (B.C. 330) by the architect Dinocrates. It has been all but totally destroyed, and the site had for centuries been lost and unknown. Mr. J. T. Wood, an English architect, discovered the site between 1869-74. Fortunately, sufficient traces of the foundations remain to render it possible to recover the plan completely, and the discovery of fragments of the Order, aided by a description by Pliny, have rendered a restoration of the temple possible. Many of the remains of this building, and of the two earlier temples, are in the British Museum. (See Professor Lethaby's book on 'Greek Buildings Represented by Fragments in the British Museum.') The whole structure was of marble, resting on a spacious stylobate of four steps. The disposition of the columns was dipteral octastyle, having double rows of twenty columns on each flank. In the conjectural restoration by Dr. Murray, an additional flight of steps is placed between the first and second rows of columns, in order to reach the upper platform. There are one hundred columns in all, many of them being sculptured on the lower drum ('columnæ celsæ,' Pliny). Over the eight columns at each end rose a vast pediment. The height of the columns was 54ft. from stylobate to the under side of the architrave. The diameter is 6ft. and half an inch at base of the shaft, giving a proportion to the Order of 9 diam. in height. At the neck the diameter is 4ft. 9½in. The shaft stood upon a moulded base and was fluted with twenty-

four flutes. The caps are of exquisite proportion and refinement. Lintelled over the capitals was placed the architrave of three fascias, panelled with a narrow sunk panel on under side. A large dentil course, with egg-and-dart enrichment under, projects over the architrave. (In the restoration by the British Museum a deep frieze is shown above the architrave, but this is now considered to be erroneous.) Above the dentil course is the cornice, crowned by a huge cyma carved in relief. The height of the entablature was 10ft. 9in., or nearly one-fifth of the height of the column. The cella is believed to have had superimposed columns to carry the roof. The building externally must have been one of the most impressive among Greek temples, owing to its size and sculpture of the above-mentioned columns, which were probably suggested by the archaic temple." These descriptive particulars are given on the tablet panel set out on this sheet of excellent drawings, kindly lent us by Mr. J. Scott Lawson, of the Royal College of Art, South Kensington.

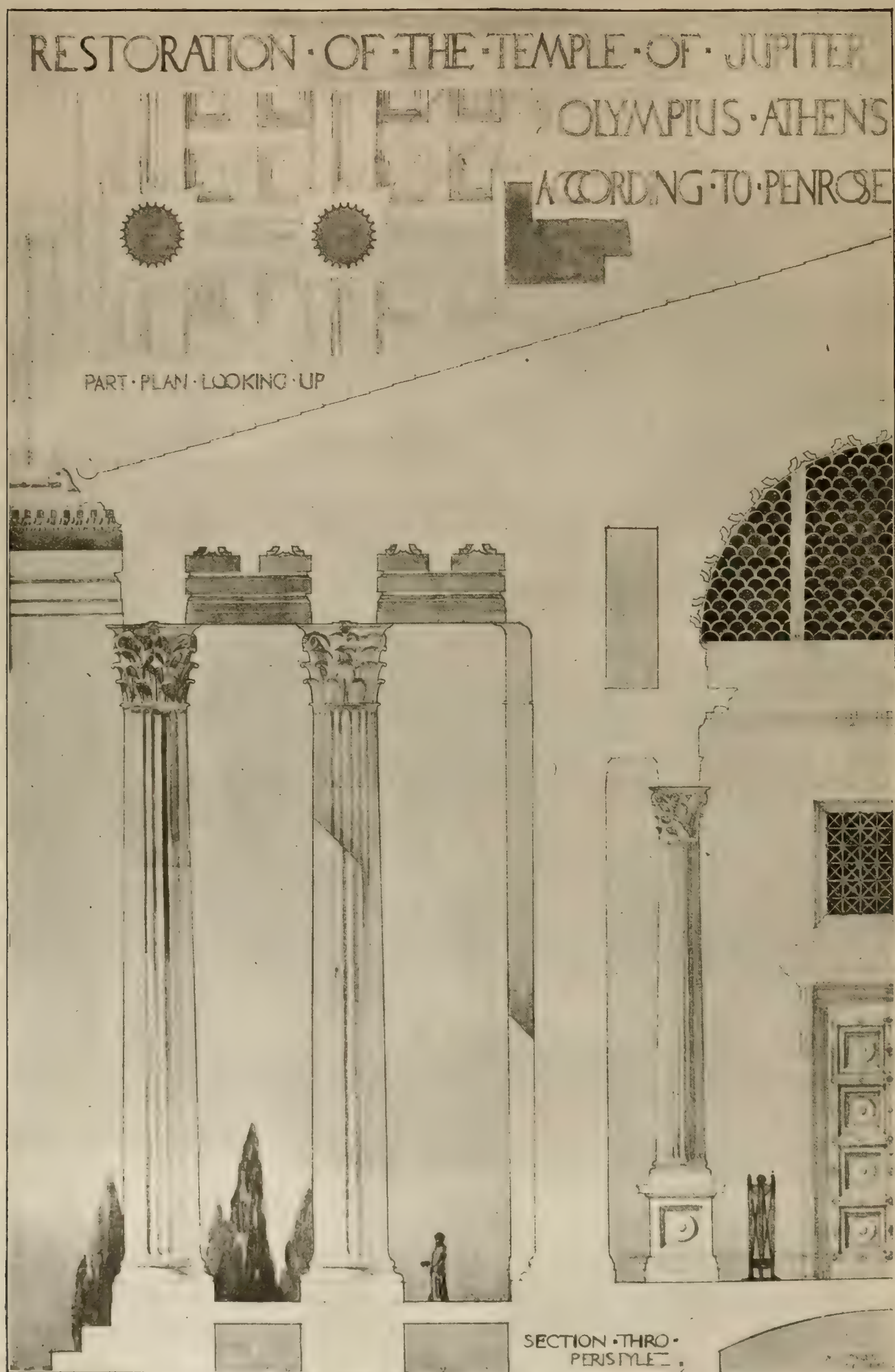
Building Intelligence.

GATESHEAD.—A new art gallery is being erected in Prince Consort-road, Gateshead, to house the Shipley Bequest of pictures bequeathed to the corporation. The area of the site enabled the architect to arrange the whole of the picture galleries on one floor, and thus obtain top lighting. The building is designed on Classical lines, and is set back from the roadway some 22ft. A carriage-drive leads to the main entrance and portico. The main building consists of five picture galleries, arranged with the main gallery, 80ft. by 40ft., in the centre, and two smaller galleries, each 44ft. by 28ft., on each side—the whole giving sufficient wall space to exhibit the five hundred pictures selected by the Gateshead Corporation. The front elevation is of stone, and the entrance portico has four stone columns of the Corinthian Order, flanked at each end by pilasters, which are surmounted by sitting figures. The gallery buildings are of brick, with stone dressings and balustrade. The contractors are Messrs. J. and W. Lowry, of Corporation-street, Newcastle, and the plans and designs have been prepared by Mr. Arthur Stockwell, M.S.A., of Newcastle and Gosforth, under whose supervision the work is being carried out. The cost will not exceed £25,000.

PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTURAL ASSOCIATION OF IRELAND.—An ordinary general meeting was held on the 15th ult. The president, Mr. Harry Allberry, A.R.I.B.A., occupied the chair. Mr. T. E. Hudman delivered a most interesting lecture on the "A.A.I. Excursion to London and Oxford, 1914." The lecture was suitably illustrated by slides lent by the courtesy of the London A.A. and others. Mr. Hudman went through the programme explaining the various interesting features, thus providing, for those who were unable to take part in the excursion, an opportunity of covering the ground in spirit. Mr. P. J. Lynch, in proposing a vote of thanks, stated that he considered this was one of the most ambitious excursions undertaken by the association. Mr. M. J. Cullen seconded the vote of thanks. The president, in putting the vote to the meeting, said that one of the outstanding features of the excursion was the extreme kindness extended to members by their brethren of the London A.A.

Mr. A. J. Tuttle, sculptor, of Lincoln has been commissioned to execute a sculptured panel for All Saints' Church, Squirrel's Heath near Romford, wherein St. George will be depicted in full armour, and driving a spear through the head of the dragon but with this difference—that the head will not be that of the usual dragon, but that of the German Eagle, the wings also being of that bird.



ROYAL COLLEGE OF ART TRAVELLING STUDENTSHIP IN ARCHITECTURE.

Awarded to Mr. W. G. JONES for his Restoration drawings.



THE BUILDING NEWS, JANUARY 1, 1915.





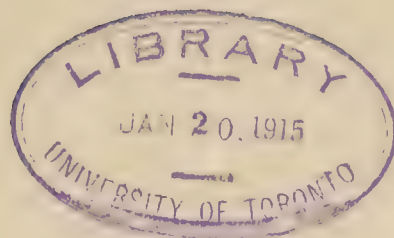
THE BUILDING NEWS, JANUARY 1, 1915.





"URANIA": ROYAL ACADEMY SILVER MEDAL AND MONEY PRIZE CARTOON OF A DRAPED FIGURE.

THE BUILDING NEWS, JANUARY 1, 1915.





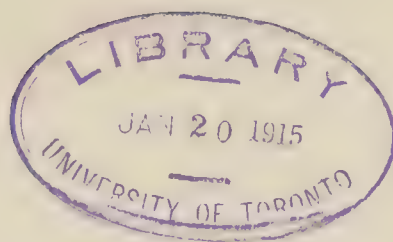


ENTRANCE TO THE IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY, PRINCE CONSORT ROAD, SOUTH KENSINGTON, S.W.

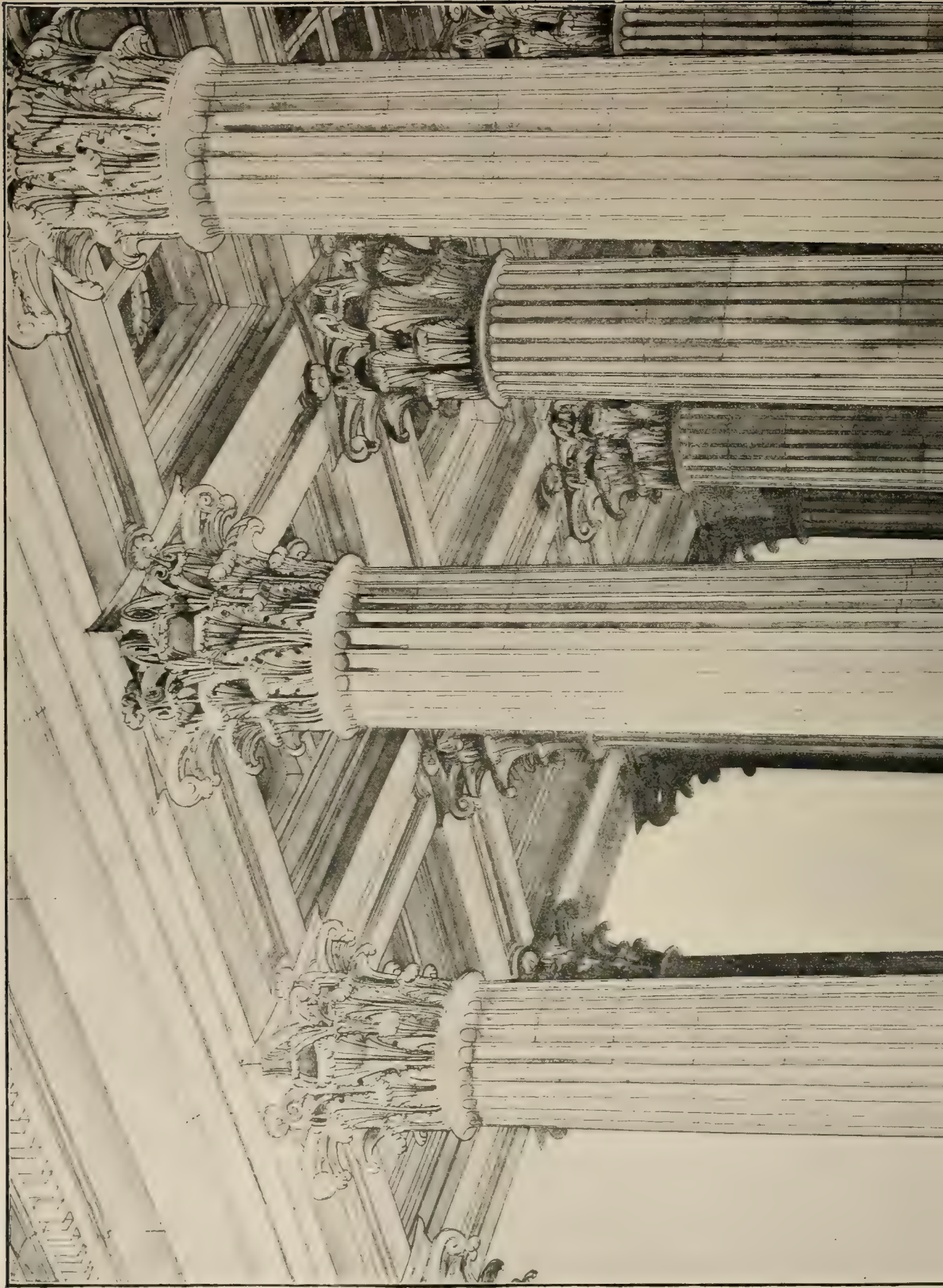
Sir ASTON WEBB, C.B., C.V.O., R.A., F.S.A., Architect.

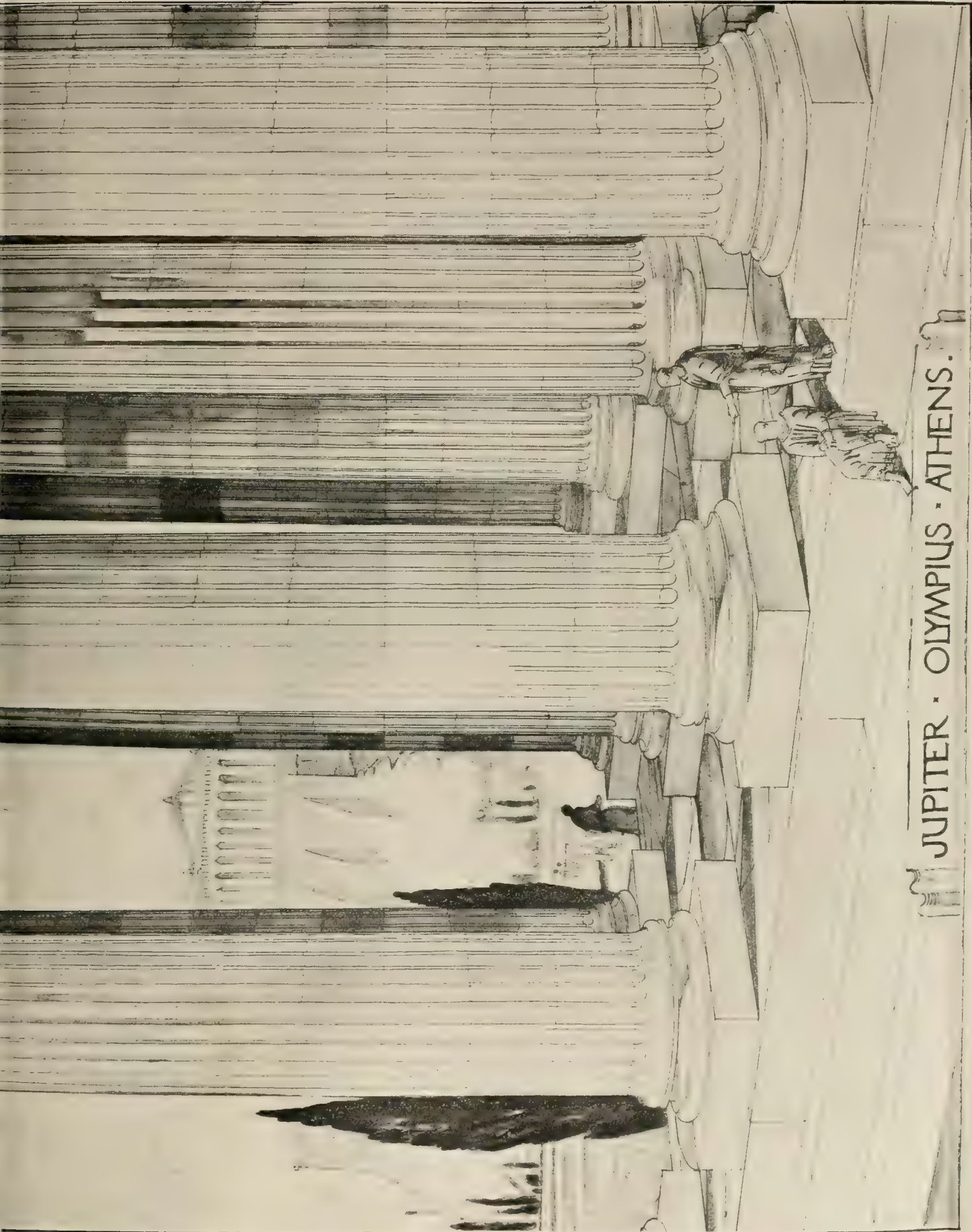
THE BUILDING NEWS, JANUARY 1, 1915

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THE BUILDING NEWS, JANUARY 1, 1915.

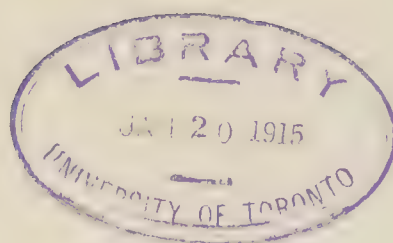




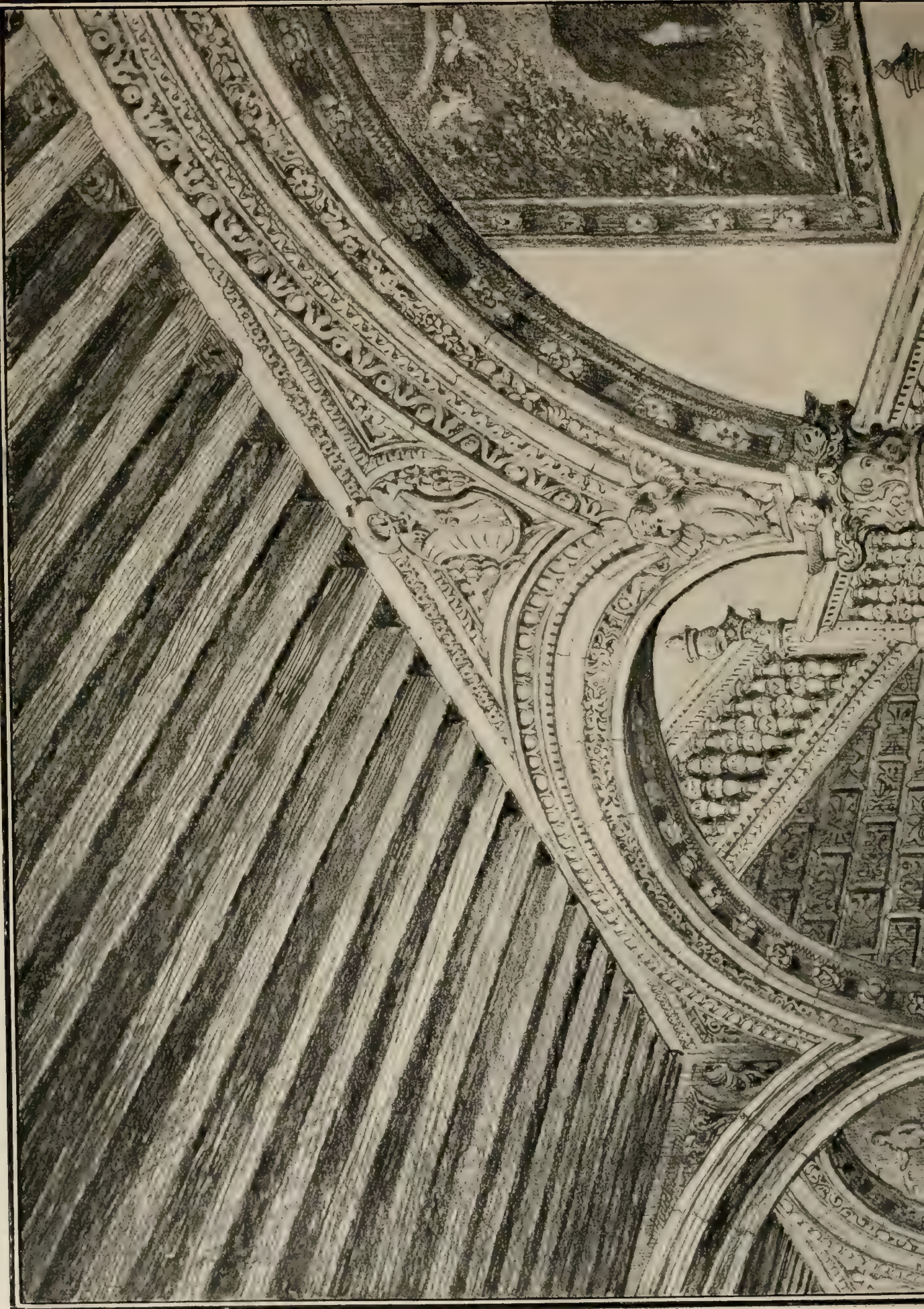
JUPITER · OLYMPIUS · ATHENS.

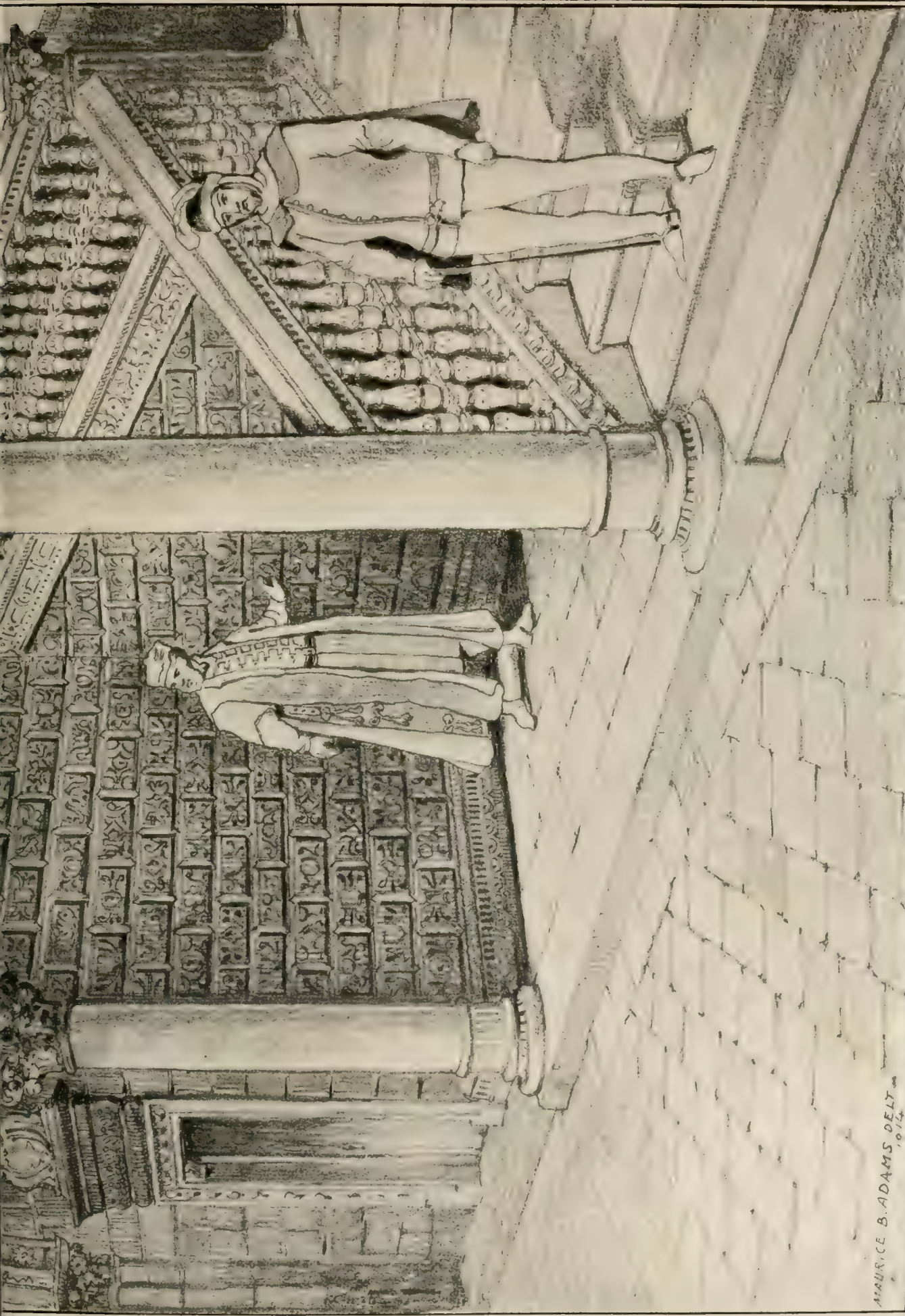
ROYAL COLLEGE OF ART TRAVELLING STUDENTSHIP IN ARCHITECTURE:
RESTORATION OF THE TEMPLE OF JUPITER OLYMPIUS AT ATHENS.

THE BUILDING NEWS. JANUARY 1. 1915.



THE BUILDING NEWS, JANUARY 1, 1915.



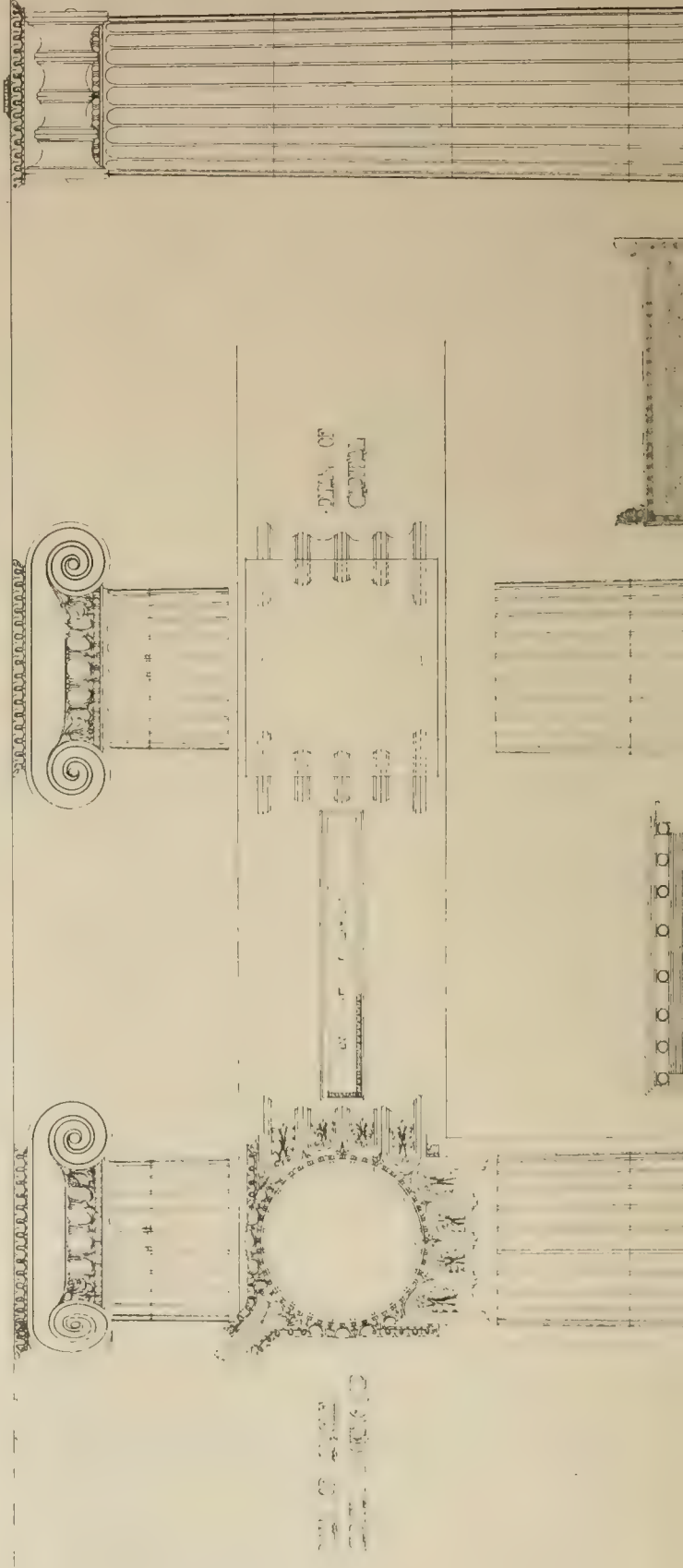
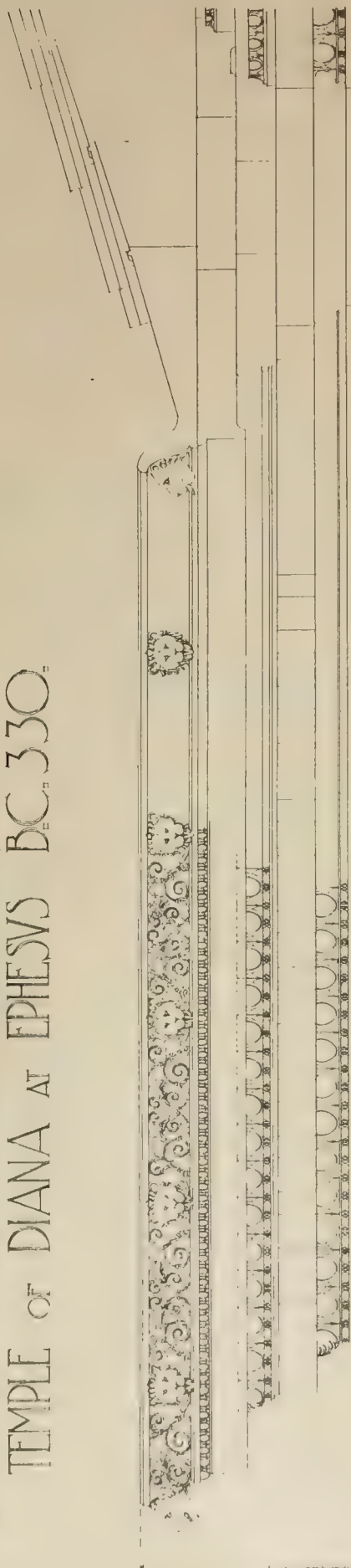


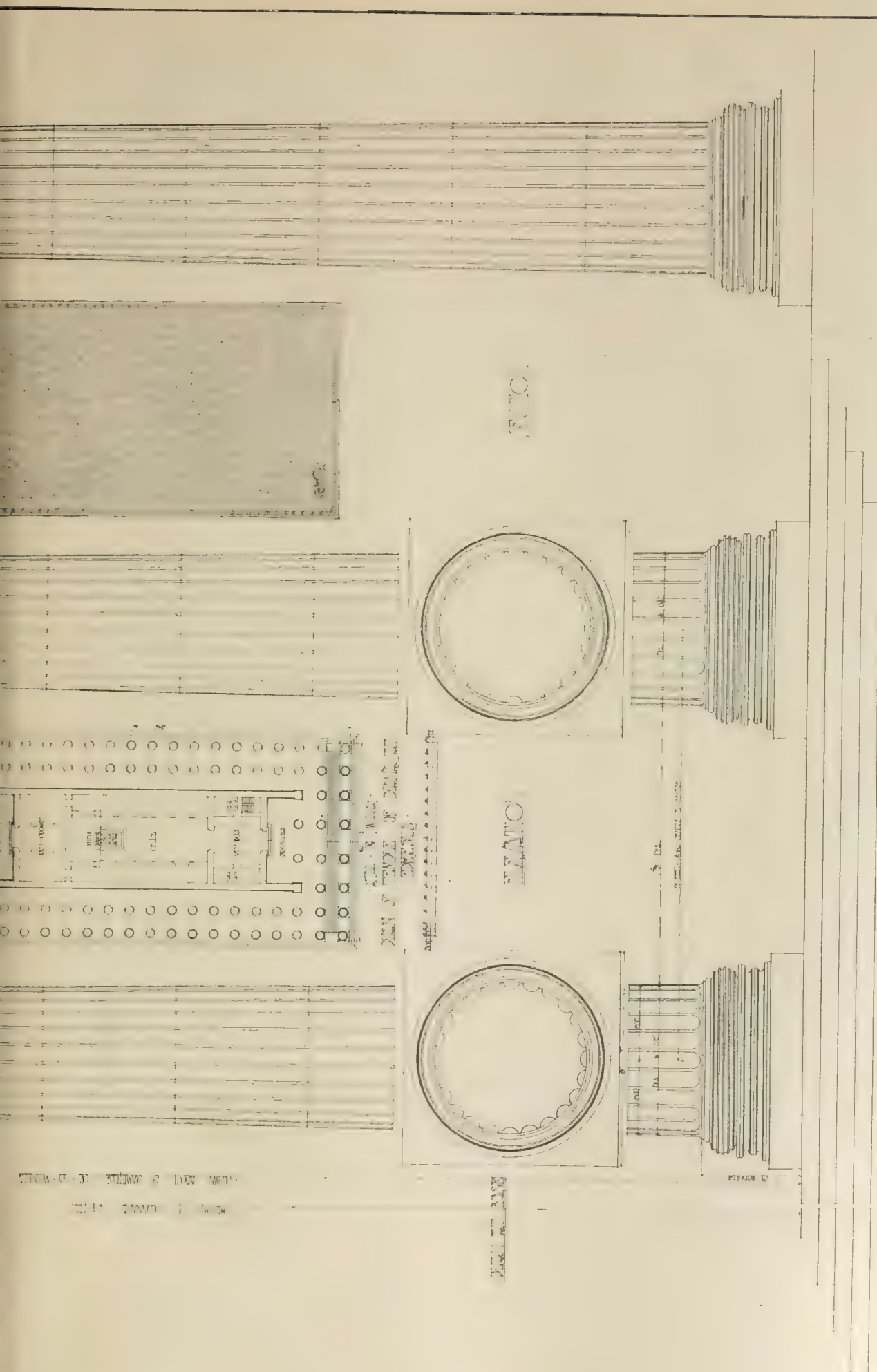
MAURICE B. ADAMS DELT.
1914

STAIRCASE IN THE ARCHIEPISCOPAL PALACE ALCALA DE HENARES SPAIN ALONSO DE COVARRUBIAS



GREEK IONIC ORDER FROM THE
TEMPLE OF DIANA AT EPHESUS B.C. 330.





Scale of feet
1 2 3 4 5 6 7 8 9 10 11 12



NEW BRONZE DOORS, MILAN CATHEDRAL. By Prof. L. Pogliaghi.

NEW BRONZE DOORS, MILAN CATHEDRAL, BY PROFESSOR L. POGLIAGHI.

These doors, which are about 18ft. high, are full of extremely delicate detail and excellent figure-work. The treatment is very free, with much of the ornamentation in high relief, carried out in due recognition of the material employed. The minuteness of the artist's manipulation, say, in the angels right and left of the top panel, and

the cherubs' heads round the frame enclosing the chief figures, is noticeable, whether this scale is not too small for the position is a question. One who has travelled all Italy for two years describes the gates as the best and finest work he saw during his visit, and in his judgment it beats the work of Cellini and Michael Angelo. Anyhow, if Professor Pogliaghi has done this beautiful bronze in a modern way, there is no pretence at an imitation of old work, and the design is harmonious and consistent.

The execution is beyond all praise. The Victor Emmanuel Memorial is being elaborated by the same sculptor. Mr. T. Hyler White sent us the accompanying photograph. This work was finished only in 1906.

Mr. P. M. Crosswhite, an inspector under the Local Government Board, held an inquiry at Cowes, I.W., on Monday, July 19, in application from the Swan Island Waterworks to the borrowing of £4,000 for works of water supply.

Currente Calamo.

The Local Government Board have just notified their decision in the appeal by Mr. John F. Lancaster against a demolition order issued by the corporation of Burnley. In August, 1913, as reported by us at the time, the Burnley Corporation issued an order for the demolition of a number of dwellings in Engine-court, on the ground that they were unfit for human habitation. Mr. Lancaster, the owner, proceeded to alter the property with the view of converting it into warehouses or storerooms. The corporation refused to sanction such conversion, and insisted on the demolition order being carried out. Mr. Lancaster appealed to the Local Government Board, claiming that as the property was not to be used again for habitation purposes the object of the corporation had been achieved, and the demolition order should be quashed. The corporation contended that the Local Government Board had no discretion in the matter, and that when once a demolition order had been made in accordance with the statute it must be carried out. The Local Government Board thereupon stated a case for the Court of Appeal. That Court decided in October last that in such cases the Local Government Board had the discretion to vary or quash, on reasonable grounds, a demolition order made by a local authority. The Local Government Board now inform the parties concerned that they have come to the conclusion that the appellant should be allowed to carry out such alterations as are necessary to convert these premises into warehouses or stores, on the understanding that when these alterations have been made to the satisfaction of the corporation, or, in case of difference between the parties, to the satisfaction of the Board, the demolition orders shall be quashed by formal consent of the Board. The Board propose to allow the appellant six months from the date of this letter within which to execute the alterations referred to. Other building owners have cause for gratitude to Mr. Lancaster for his public-spirited but, we hear, costly, action, which has been completely vindicated on all points.

Sir Edward Poynter, P.R.A., has now issued particulars of the coming Winter Exhibition at the Royal Academy, which we gave on this page in our issue of Dec. 11 last. The object, as announced then, is the formation of a fund for division between the Red Cross, the St. John Ambulance Society, the Artists' General Benevolent Institution, and the artists whose works are sold. Something like 800 works are now being hung in the galleries by a sub-committee, and the exhibition promises to be one of varied interest. There will be undoubtedly much distress among artists during the coming year, and generous patronage from picture-buyers and the general public is bespoken. It should be borne in mind that every artist who sells his picture is contributing at least two-thirds of its value to two most important and deserving organisations of charity and mercy. Concurrently with the exhibition of British works of art one or more of the galleries will be given up to the exhibition of works of Belgian painting and sculpture, the whole profits from which will be devoted for the relief of Belgian artists.

Mr. Walter R. Row, M.P., the Member of Parliament for the Borough of Scar-

borough, is to be congratulated on his elicitation from the Premier of a promise that the damage to persons and property sustained during the bombardment of the three towns, shall be followed by relief from Imperial funds. Mr. Asquith adds that "The scope and measure of such relief, and the machinery for ascertaining and administering it are matters which are receiving careful consideration." We hope there will be no delay. The loss, which has largely fallen on poor property-owners and their still poorer tenants, is estimated at over £100,000. In any case, the buildings should be reinstated as soon as possible. Our most crochety anti-restorers will hardly contend that these "ruins" should remain indefinitely as monuments of German culture—and derision!

The address of the President, Mr. R. Clipston Sturgis, at the forty-eighth annual convention of the American Institute of Architects, which we give elsewhere, was an able plea for the Institute's claims on our American professional brethren, and a broadly and generously-phrased reminder to them, and to all who are similarly seeking to safeguard architecture from the inroads of the charlatan, that the man who can perform all the service rightly demanded of an architect does not exist, and that, therefore, the problem of determining fairly who shall be allowed to practise as an architect must receive the most careful consideration at the hands of those confronted with its solution. There are some of us here, as well as in America, who forget this, and ignore the pitfalls in the path of the architect who essays the acquirement of the knowledge of too many things, failing to recognise the duty of enlisting the aid of others to perform that which we cannot. Mr. Clipston Sturgis's remarks on the duty and advantage of co-operation based on mutual understanding, were wise ones, and deserve careful meditation.

Mr. J. Landfear Lucas, writing to the *Morning Post*, draws attention afresh to the diverse statements made as to the height from cross to pavement of the dome of St. Paul's. John Weale, in "London Exhibited," in 1851, gave the height as 365ft. from the ground, 356ft. from the floor of church, and 375ft. from that of the crypt. The "Cathedral Guide" of 1880 asserted that the cross was 352ft. from the floor of church and 360ft. from the street pavement. The Rev. Lewis Gilbertson, F.S.A., in his "Notes on the Fabric," gives as the altitude 370ft. from the churchyard-pavement level; Godwin and Butler, in "The Churches of London" (1838), asserted that the height was 340ft., and in "Old and New London," Vol. I. p. 254, from floor pavement to top of cross is estimated at 365ft. Mr. William Woodward replies that Mr. Landfear Lucas has omitted to quote the most reliable authority, "The Public Buildings of London," by John Britton, F.S.A., and Augustus Pugin, published in 1825, where, in the carefully-drawn section of the Cathedral appearing in Vol. I. the following heights are given: From the lower level of the floor of the crypt to the extreme top of the cross, 381ft.; from the upper surface of the floor of the Cathedral proper to the extreme top of the cross, 360ft.; from the upper surface of the floor of the Cathedral to the top of the inner cupola, 217ft.; from the upper surface of the floor of the Cathed-

ral to the top of the outer dome, 270ft. Incidentally Mr. Woodward remarks that "whilst writing *re* St. Paul's it is always convenient to designate the inner 'dome' as the cupola, and the outer one as the dome. Between these two curves passes a brick cone, 18in. thick, and this cone carries the stone lantern which we see from the outside of the Cathedral, and which weighs about 700 tons. The cupola is also of brick, 18in. thick, and the dome is constructed of timber. This disposition of cupola, cone, and dome illustrates the skill and ingenuity of Sir Christopher Wren, and gives to St. Paul's a beauty which is entirely absent from St. Peter's, where there is but one dome. The cupola of St. Paul's is at such a height from the eye that its exquisite curve can be viewed with ease from the interior; whilst the dome, majestic and of equally fine curve, rises in due proportion to its architectural adjuncts, as viewed from the exterior."

Sir Thomas G. Jackson, R.A., in a letter to the *Times*, exposes the shallowness of German pretensions to artistic culture. He remarks that "Germany has produced but two really great painters, both of them, be it remarked, South Germans; no great sculptor, the admirable metalwork of Peter Vischer being all on a small scale; their Gothic architecture was borrowed from the French and spoiled; and their Renaissance work, when not verging on the grotesque, is commonplace. The best architecture in Germany is their Romanesque work, which was borrowed from Lombardy. It is wanting in the finer graces, often clumsy and ill-proportioned; sometimes, as in the western towers at Laach, quite ugly; but it has a sturdy, virile character which is commendable. Cologne Cathedral is based upon Amiens, of which it reproduces and exaggerates the weak points. Of the modern work at the west end the less said the better. The truth is that the Germans are not a creative people, and, therefore, only in an inferior degree artistic. The present achievements of Germany in architecture consist in wantonly destroying, for no military purpose, the glorious monuments of the past. They have the assurance to tell us they will replace them by something better. What they are capable of at the present day may be judged by the monstrous pair of steeples at Cologne Cathedral, and the hideous monumental structure that vulgarises the meeting of two beautiful rivers at Coblenz. May Heaven preserve the world from such 'cultured' atrocities."

Mr. Alfred R. Potter has been appointed secretary to the Town-Planning Institute, in succession to Mr. G. L. Pepler.

The Local Government Board have sanctioned a loan of £5,162 to the urban district council of Portland for the erection of municipal offices.

Mr. W. L. Carr, surveyor to the Rushp-Northwood Urban District Council, has had his salary increased by £50 per annum.

The corporation of Dublin, at a special meeting, have unanimously agreed to the proposal of the Archbishop of Dublin to take over the Ormond Market as a site for the building of a Roman Catholic cathedral.

The fourth and last of the four colossal bronzes by Sir Thomas Brock for the flanking pedestals of Sir Aston Webb's Queen Victoria Memorial in St. James's Park is now being placed in position. Each of the four groups consists of a human figure and a lion, both of heroic dimensions. The subjects symbolised are Peace, Progress, Agriculture, and Industrial Labour—the latter represented by a smith resting upon his hammer. Two other groups are yet to be placed on either side above the fountains, which will complete the scheme.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us. Timber quotations we omit altogether, as published figures differ so widely that they are, we fear, in many cases quite unreliable.

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£7 10 0 to	£8 0 0
Wrought-Iron Girder Plates	7 15 0 ..	10 0 0
Steel Girder Plates	8 0 0 ..	9 0 0
Bar Iron, good Staffs	6 5 0 ..	8 10 0
Do., Lowmoor, Flat, Round, or Square	22 0 0 ..	0 0 0
Do., Welsh	5 15 0 ..	5 17 0
Boiler Plates, Iron—		
South Staffs	8 0 0 ..	8 15 0
Best Sneathill	9 0 0 ..	9 10 0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s. to £9. Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0 ..	£13 10 0
Best ditto	13 0 0 ..	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.	Per ton.
Cast-Iron Columns	£6 17 6 to	£8 10 0
Cast-Iron Stanchions	6 17 6 ..	8 10 0
Rolled-Iron Fencing Wire	8 5 0 ..	8 10 0
Rolled-Steel Fencing Wire	7 5 0 ..	7 10 0
Galvanised	8 15 0 ..	9 5 0
Cast-Iron Sash Weights	5 10 0 ..	5 15 0
Cut Floor Brads	10 15 0 ..	—
Corrugated Iron, 24 gauge	16 0 0 ..	—
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14 5 0 ..	—

B.B. Drawn Telegraph Wire, Galvanised—
to 8 9 10 11 12 B.W.G.
£10 10s. £10 15s. £11 0s. £11 5s. £11 15s. per ton.

Cast-Iron Socket Pipes—	3in. diameter	4in. to 6in.	7in. to 24in. (all sizes)
.....	£6 15 0 to	£7 2 6	£12 6
.....	6 10 0 ..	6 12 6	—
.....	6 17 6 ..	7 2 6	—

[Coated with composition, 5s. 0d. per ton extra. turned and bored joints 5s. per ton extra.]

Pig Iron—
Cold Blast, Lillieshall 80s. 0d. to | 127s. 6d. || Hot Blast, ditto | 87s. 0d. .. | 97s. 0d. |

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—	Gas-Tubes	72½ p.c.
.....	Water-Tubes	66½ "
.....	Steam-Tubes	65 "
.....	Galvanised Gas-Tubes	60 "
.....	Galvanised Water-Tubes	56½ "
.....	Galvanised Steam-Tubes	50 "

OTHER METALS.

Spelter, Silesian	Per ton	£21 5 0 to	£21 7 6
Lead Water Pipe, Town	24 5 0 ..	—	—
Country	25 5 0 ..	—	—
Lead Barrel Pipe, Town	25 5 0 ..	—	—
Country	26 5 0 ..	—	—
Lead Pipe, Tinned inside, Town	26 5 0 ..	—	—
Country	27 5 0 ..	—	—
Lead Pipe, Tinned inside and outside	28 15 0 ..	—	—
Country	29 15 0 ..	—	—
Composition Gas-Pipe, Town	27 5 0 ..	—	—
Country	28 5 0 ..	—	—
Lead Soil-pipe (up to 4in.) Town	27 5 0 ..	—	—
Country	28 5 0 ..	—	—

[Over 4in. £1 per ton extra.]

Lead, Common Brands	17 17 6 ..	18 12 6
Lead Shot, in 28lb. bags	24 15 0 ..	—
Copper Sheets, sheathing & rods	78 0 0 ..	78 10 0
Copper, British Cake and Ingot	61 15 0 ..	62 5 0
Tin, English Ingots	154 0 0 ..	155 0 0
Do., Bars	155 0 0 ..	156 0 0
Pig Lead, in lowt. Pigs (Town)	19 2 6 ..	19 10 0
Sheet Lead, Town	23 15 0 ..	—
Country	24 15 0 ..	—
Genuine White Lead	29 15 0 ..	—
Refined Red Lead	29 0 0 ..	—
Sheet Zinc	55 0 0 ..	—
Old Lead, against account	18 5 0 ..	—
Tin	8 1 0 ..	—
Cut nails (per cwt. basis, ordinary brand)	0 12 9 ..	—

* For 5 cwt. lots and upwards.

SLATES.

Blue Portmadoc ..	20 x 10	12 12 6	13 12 6	per 1,000 of
.....	16 ..	8 ..	6 12 6	at r. stn.
Blue Bangor	20 ..	10 ..	13 2 6	—
.....	20 ..	12 ..	13 17 6	—
First quality	20 ..	10 ..	13 0 0	—
.....	20 ..	12 ..	13 15 0	—
.....	16 ..	8 ..	7 5 0	—
Eureka unfading green	20 ..	10 ..	15 17 6	—
.....	20 ..	12 ..	18 7 6	—
.....	18 ..	10 ..	13 5 0	—
.....	16 ..	8 ..	10 5 0	—
Permanent Green ..	20 ..	10 ..	11 12 6	—
.....	18 ..	10 ..	9 12 6	—
.....	16 ..	8 ..	6 12 6	—

BRICKS.

(All prices net.)

First Hard Stocks ..	£1 15 0	per 1,000	alongside, in
Second Hard Stocks ..	1 11 0	..	..
Mild Stocks	1 9 0	..	..
Picked Stocks for Facings	2 5 0	..	delivered at rly. stn.
Fleatons	1 14 0	..	..
Pressed Wire Cuts ..	1 18 0	..	..
Red Wire Cuts	1 14 0	..	..
Best Fareham Red ..	3 12 0	..	..
Best Red Pressed Ruabon Facing ..	5 0 0	..	..
Best Blue Pressed Staffordshire	3 15 0	..	..
Ditto Bullnose	4 0 0	..	..
Best Stourbridge Firebricks	4 0 0	..	..
2½in. Best Red Accrington Plastic Facing Bricks	4 10 6	..	(Net, delivered in full truckloads in London.)
3½in. Accrington Best Red Plastic Facing per 1,000 Bricks	£2 10 0	..	..
3½in. ditto Second Best Plastic ditto	2 2 6	..	..
Ditto Ordinary Secondary Bricks	1 11 3	..	..
Ditto Plastic Engineering Bricks	1 17 6	..	..
Sewer Arch Brick not more than 3½in. thickest part	2 0 0	..	..
3½in. Chimney Bricks fit for outside work ..	2 6 0	..	..
3½in. ditto ditto through and through ..	2 0 0	..	..
3½in. Beaded, Ovoid and Bevel Jamb; Octagons; 22" and 1½" radius Bullnoses; Stock patterns	3 7 6	..	..
Accrington Air Bricks, 9" x 2 course deep, each ..	0 0 6	..	..
Ditto 9" x 1 course	0 0 3	..	..

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening ..	0 1 3
4 ditto 4½" ditto ditto ditto ..	0 1 8
5 ditto 4½" ditto ditto ditto ..	0 2 1
6 ditto 4½" ditto ditto ditto ..	0 2 6
3 ditto 5½" ditto ditto ditto ..	0 2 1
4 ditto 5½" ditto ditto ditto ..	0 2 11
5 ditto 5½" ditto ditto ditto ..	0 3 6
6 ditto 5½" ditto ditto ditto ..	0 4 6

Net free on rail, or free on boat at works.

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

White, Ivory, and Best.	Buff, Cream, and Second.	Other Colours.
Salt Glazed.	Best.	Seconds.
Stretchers—	12 7 6	10 17 6
Headers—	11 17 6	10 7 6
Quoins, Bullnose, and 4½in. Flats—	15 17 6	14 17 6
Double Stretchers—	17 17 6	16 7 6
Double Headers—	14 17 6	13 7 6
One side and two ends, square—	18 17 6	17 7 6
Two sides and one end, square—	19 17 6	18 7 6
Splays and Squints—	17 7 6	15 7 6
Plinth and Hollow Bricks, Stretchers and Headers—	5d. each	6d. each
Double Bullnose, Round Ends, Bullnose Stops—	5d. each	6d. each
Rounded Internal Angles—	4d. each	5d. each

MOULDED BRICKS.

Stretchers and Headers—	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—	1½ each	1½ each	1½ each	1½ each
Sill Bullnose, Stretchers, and Headers—	5d. each	4d. each	6d. each	6d. each
Majolica or Soft Glazed Stretchers and Headers	£22 17 6	..	..	..
Quoins and Bullnose	27 17 6	..	..	..
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours, by 4½in. 1s. 2d. each	—	—	—	—
Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.	—	—	—	—
* These prices are carriage paid in full truck loads to London Stations.	s. d.	..	..	..
Thames Sand	7 6	per yard, delivered	..	..
Pit Sand	7 0	..	..	..
Thames Ballast	6 0	..	..	..

Best Portland Cement 36 0 | to 41 0 | delivered || Ground Blue Lias Lime | 21 6 | per ton delivered | .. |

Exclusive of charge for sacks.

Grey Stone Lime	s. d.	s. d.	Per yard.
.....	13 6	to 14 0	delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.	—	—	—

STONE.*

Red Mansfield, in blocks	per foot cube	£0 2 4
Darley Dale, ditto .....	..	0 2 3
Red Corsehill, ditto .....	..	0 2 2
Closeburn Red Freestone, ditto ..	..	0 2 0
Ancaster, ditto .....	..	0 1 10
Greenshill, ditto .....	..	0 1 10
Reer, ditto .....	..	0 1 6
Chilmark, ditto (in truck at Nine Elms) .....	..	0 1 10½
Hard York, ditto .....	..	0 2 0
Do. do. 6in. sawn both sides, landings, random sizes	per foot sup.	0 2 8
Do. do. 3in. slab sawn two sides, random sizes .....	..	0 1 3

* All F.O.R. London.

Bath Stone, delivered on road waggon, Paddington Depot per foot cube	£ s. d.	0 1 7½
Ditto, ditto, Nine Elms Depot ..	..	0 1 9½
Beer Stone, delivered on rail at Seaton Station .....	..	0 1 1
Ditto, delivered at Nine Elms Station .....	..	0 1 7½
Portland Stone, in random blocks of 20ft. average:—		
Delivered on road waggon	Brown	White
at Paddington Depot, Whit Bed. Base Bed.	..	..
Nine Elms Depot, or ..	Per foot cube.	..
Pimlico Wharf	£0 2 3	£0 2 4½

TILES.

Plain red roofing tiles	s. d.	Delvrd. at
.....	42 0	per 1000 ry. sn.
Hip and Valley tiles	3 7	per doz. "
Broseley tiles	50 0	per 1000 "
Ornamental tiles	52 6	..
Hip and Valley tiles	4 0	per doz. "
Ruabon red, brown, or brindled ditto (Edwards)	57 6	per 1000 "
Ornamental ditto	60 0	..
Hip tiles	4 0	per doz. "
Valley tiles	3 0	..
Selected "Perfecta" roofing tiles: Plain tiles (Peake's) ..	46 0	per 1000 "
Ornamental ditto	48 6	..
Hip tiles	3 10½	per doz. "
Valley tiles	3 4½	..
"Rosemary" brand plain tiles ..	48 0	per 1000 "
Ornamental tiles	50 0	..
Hip tiles	4 0	per doz. "
Valley tiles	3 8	..
Staffordshire (Hanley) Reds or brindled tiles	42 6	per 1000 "
Hand-made sand-faced	45 0	..
Hip tiles	4 0	per doz. "
Valley tiles	3 6	..
Hartshill "brand plain tiles, sand-faced	45 0	per 1000 "
Pressed	42 6	..
Ornamental ditto	47 6	..
Hip tiles	4 0	per doz. "
Valley tiles	3 6	..

OILS.

Rapeseed, English pale, per tun	£28 15 0	to £29 5 0
Ditto, brown	26 15 0	.. 27 5 0
Cottonseed, refined	29 0 0	.. 30 0 0
Olive, Spanish	39 10 0	.. 40 0 0
Seal, pale	31 0 0	.. 31 10 0
Cocoonut, Cochin	46 0 0	.. 46 10 0
Ditto, Ceylon	42 10 0	.. 43 0 0
Ditto, Mauritius	42 10 0	.. 43 0 0
Palm, Lagos	32 5 0	.. 33 5 0
Ditto, Nut Kernel	35 0 0	.. 35 10 0
Oleine	17 5 0	.. 19 5 0
Sperm	30 0 0	.. 31 0 0
Lubricating, U.S.	0 7 0	.. 0 8 0
Petroleum, refined	0 0 6½	.. 0 0 6
Tar, Stockholm	1 6 0	.. 1 10 0
Ditto, Archangel	0 19 6	.. 1 0 0
Linseed Oil	0 2 5	.. —
Baltic Oil	0 2 9	.. —
Turpentine	0 3 2	.. —
Putty (Genuine Linseed Oil	0 9 0	.. —
"Stority" Brand	0 9 0	.. —

GLASS (IN CRATES).

English Sheet Glass: 15oz.	21oz.	26oz.	32oz.
Fourth	5d. ...	5½d. ...	6d. ...
Thirds	5½d. ...	6d. ...	6½d. ...
Fluted Sheet	4½d. ...	5½d. ...	—
Hartley's English Rolled Plate	3d. ...	3½d. ...	4d. ...

Figured Rolled and Reponssine... 4d. ... 5½d.

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 6
Fine Elastic Carriage	0 13 0
Superfine Pale Elastic Carriage ..	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Fine French Oil	0 13 9
Eggshell Flattening Varnish	1 4 9
White Copal Enamel	0 13 0
Extra Pale Paper	0 10 0
Best Japan Gold Size	0 16 0
Best Black Japan	0 9 0
Oak and Mahogany Stain	0 8 0
Brunswick Black	0 16 0
Berlin Black	0 10 6
Knottin'	0 10 6
French and Brush Polish	0 10 0

Mr. A. B. McDonald, the retiring city engineer of Glasgow, has been granted by the corporation a superannuation allowance of £500 per annum.

A chapel and lodge are about to be built in the new cemetery of the Surbiton Urban District Council, from plans by Mr. H. W. Barham, of Philpot-lane, E.C.

Mr. Robert Dunkeld, of the county surveyor's office, Dumfries, has been appointed district surveyor to the Dore Rural District Council, Herefordshire, in succession to Mr. Britten.

Mr. S. S. Davson, M.I.C.E., has been appointed resident engineer for the new sewerage works at Cleethorpes, at a salary of £350 per annum, for twelve months. Mr. Davson is at present employed by the Port of London Authority.

TRADE NOTES.

We are informed by Mr. Montgomery that it has been decided to postpone the Building Trades' Exhibition which was to have been held at Olympia in April until 1916.

Boyle's latest patent "Air-pump" ventilators have been applied to Wincanton Isolation Hospital.

Telephone: DALSTON 1388

OGILVIE & CO.

Many years connected with the late firm of W. H. LASCELLES & CO., of Bunhill Row.

Mildmay Avenue, ISLINGTON, N.**EXPERTS in HIGH-CLASS JOINERY.****ALTERATIONS & DECORATIONS.**

ESTIMATES FREE.



PLEASE MENTION THIS JOURNAL.

FOR

Olivers'**Seasoned****Hardwoods,**

TO—

WM. OLIVER & SONS, Ltd.,**120, Bunhill Row, London, E.C.**

TENDERS.

BARNET.—For the erection of infirmary at Wellhouse-lane, Barnet, for the guardians. Messrs. William and Cox, 34, Henrietta-street, Covent Garden, W.C., architects:—

Foundations.	
Crossley and Son, Bromley	£1,270 0 0
Higgs and Hill, Ltd., South Lambeth-road, S.W.	4,084 0 0
Lawrance, E., & Sons, City-road	3,943 0 0
Batley, Sons, and Holness, Old Kent-road, S.E.	3,922 0 0
Roberts and Co., Earl's Court-road, S.W.	3,830 0 0
Higgs, F. and H. F., Herne Hill	3,825 0 0
Symes, A. E., Stratford	3,804 0 0
Lavington, Ltd., Clapham-road	3,785 0 0
Peppiatt, H., and Cooper, High Holborn, W.C.	3,717 18 10
Rodhouse, S., & Son, Stofold	3,711 19 0
Drever, O. P., and Son, Ltd., Kettering	3,649 13 0
Pavey and Armitage, Southend	3,609 10 0
Fairhead, A., and Son, Enfield	3,586 0 0
Moss, S. E., Southend-on-Sea	3,543 9 3
Brightman, C. and Son, Ltd., Watford	3,527 0 0
Whiter, J. E., & Co., Newington	3,479 0 0
Butts, S. E.	3,454 0 0
Rowley Bros., Wood Green, N.	3,454 0 0
Miskin, C., and Sons, Ltd., St. Albans	3,400 0 0
Henson, G., and Son, Wellingborough	3,396 18 5
Heath, T. W., and Son, Cromwell-road, S.W.	3,387 2 8
Thomas, J., Enfield	3,365 7 11
Saunders, E. J., Croydon	3,203 0 0
Willmott, J., & Sons, Hitchin	3,025 0 0
Lyall Bros., Southend-on-Sea	3,000 0 0
Superstructure.	
Roberts and Co.	£22,900 0 0
Crossley and Son	22,900 0 0
Batley, Sons, and Holness	22,184 0 0
Symes, A. E.	22,180 0 0
Drever, O. P., and Son, Ltd.	22,093 0 3
Brightman, C., and Son, Ltd.	22,011 0 0
Lawrance, E., and Sons, Ltd.	21,966 0 0
Peppiatt, H., and Cooper	21,913 11 6
Rodhouse, S., and Son	21,879 17 3
Heath, T. W., and Son	21,816 19 11
Higgs and Hill, Ltd.	21,808 0 0
Pavey and Armitage	21,800 0 0
Thomas, J.	21,375 4 7
Higgs, F. and H. F.	21,323 0 0
Moss, S. E.	21,169 10 6
Whiter, J. E., and Co.	21,140 0 0
Henson, G., and Son	21,126 3 9
Miskin, C., and Sons, Ltd.	21,039 0 0
Lavington, Ltd.	20,922 0 0
Fairhead, A., and Son	20,639 0 0
Lyall Bros.	20,601 0 0
Willmott, J., and Sons	20,500 0 0
Rowley Bros.	20,394 0 0
Saunders, E. J.	20,330 0 0

BODMIN.—For erecting asylum laundry, for the county asylum visiting committee. Mr. J. Jenkins, St. Nicholas-street, Bodmin, architect:—
Shelly Bros., Bodmin (accepted) £695 0 0

BRIDGWATER.—For supplies of road-rolling and other plant, for the Bridgewater Rural District Council. Accepted tenders:—

Rollers and scarifiers:—	
Marshall and Sons	£550 0 0
Trolleys:—	
Cummins and Sons, Bridgewater	60 0 0
Sleeping vans:—	
Marshall and Sons	61 10 0
Water carts:—	
Marshall and Sons	30 0 0
(Total amount of accepted tenders, £731 10s. 8d.)	

CAMBRIDGE.—For the erection of sawmill, engine room, brick-making building, drying-kilns, &c., for Messrs. Watts and Son, Ltd., Cambridge. Mr. Sidney French, M.S.A., Lic. R.I.B.A., Cambridge, architect:—
Brignell, J., Cambridge (Accepted.) £2,307 0 0

(Exclusive of all bricks and timber.)

CHURCHILL.—For carrying out water-supply works, for the Kidderminster Rural District Council. Mr. G. J. Shepherd, 85, Chester-road, Kidderminster, architect:—

Greenly, W. F., Leominster	£522 12 4
Law, G., Kidderminster	499 0 0
Jukes, C. W., Tipton	496 12 1
Childs and Withers, Worcester	495 1 8
Jackson, C., Tipton	459 4 9
Willets, W., and Sons, Staffs	455 0 0
Trentman, G. P., Birmingham	449 0 0
Hanny Bros., Swansea	436 2 7
Sykes, A., West Bridgford	435 9 2

* Accepted.

HALEMOOR.—For the works of water-supply, for the Whitehaven Rural District Council. Mr. G. Boyd, C.E., 33, Queen-street, Whitehaven, engineer:—

Contract No. 1:—

Ritchie, J. D., Ltd., Aclam Foundry, Middlesbrough	£67 0 0
Contract No. 2:—	
Hodgson, J. B., 166, Main-street, Fridington, Cumberland	64 0 0

ISLINGTON.—For the erection of a library in South-East Islington, for the borough council:—
Patman & Fotheringham, Ltd., £9,771 0 0
(Recommended for acceptance.)

LONDON.—For the supply of high and low-tension switchgear for tramways sub-stations, for the London County Council:—

British Westinghouse Electric and Manufacturing Co., Ltd., Manchester	
Switchgear and Cowens, Ltd., Salford	£1,324 17 0
Ferguson, Pailin, and Co., Manchester	1,275 3 0
Spagnoletti, Ltd., Shepherd's Bush, W.	1,275 0 0
Johnson and Phillips, Ltd., Charlton, S.E.	1,240 7 0
(Estimate of chief officer of tramways, £1,100)	1,177 19 6

* Recommended for acceptance.

MAIDSTONE.—For executing drainage work at Nos. 29 to 39, St. Faith's-street, for the town council:—

Corben and Co.	£73 10 0
Martin and Newman	68 10 3
Crutenden and Son	68 0 0
Barden and Head	65 10 0
Barney and Son	63 7 6
Walter, C.	61 0 0
Ansett and Son	59 13 10
Pearce and Sons	59 10 0
Smith, N. (accepted)	53 2 6

MANCHESTER.—For converting arches to electric sub-station, for the Lancashire and Yorkshire Railway Co.:—

Tate and Gordon, Ltd., 322, Cheetham Hill-road, Manchester (accepted).

NORTHAMPTON.—For the erection of goods offices, for the Midland Railway Co.:—
Pullen, J. G., and Sons, Bridge-street, Northampton. (Accepted.)

NORTH WOOLWICH.—For extension of pumping station, North Woolwich, in connection with the North Woolwich drainage, for the London County Council:—

Moss, S. E., Southend-on-Sea	£13,979 16 4
Dick, Kerr, & Co., Ltd., Cannon-street, E.C.	13,476 19 6
Coles, A. N., Westbourne Park	13,674 18 7
Fenn, A. M., Woolwich	12,660 0 0
Mills, W., and Sons, Ltd., Westcombe Park, S.E.	11,671 14 0
Everitt, G. E., and Sons, Ltd., Croydon (accepted)	11,615 0 0

PELSALL, STAFFS.—For the erection of an infants' school (258 places), Pelsall, for the Staffordshire Education Committee:—

Gough, N., and Son, Wolverhampton (accepted)	£3,200 0 0
For providing low-pressure heating apparatus:—	
Gough and Felgate, Burton-on-Trent (accepted)	£143 0 0

SOUTHAMPTON.—For repairing the roadway from the Royal Pier to the platform, for the harbour board:—

Douglas, J., Southampton	£177 0 0
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(Accepted.)

SOUTHAMPTON.—For the reconstruction of Eastern District school, for the Southampton Education Committee:—

Jenkins and Sons, Ltd.	£17,468 0 0
Stevens, H., and Co. (accepted)	17,320 0 0

(Borough engineer's protecting estimate, £17,500.)

STAFFORD.—For building a tuberculosis dispensary at Stafford, for the Joint Tuberculosis Committee:—
Espey and Sons (accepted) £569 10 0
(In lieu of tender for £542 10s. for Adams and Pemberton, withdrawn since acceptance.)

STAMFORD.—For the erection of houses, for the town council:—

Brown, G., Peterborough, one block, six houses, £990 (22 weeks); two blocks, 12 houses, £1,975 (26 weeks); three blocks, 16 houses, £2,980 (26 weeks); four blocks, 24 houses, £3,975 (26 weeks).	
Hinson, T. H., Bourne, four blocks, £4,524 (24 weeks).	
Hinson and Co., Stamford, four blocks, £4,494 (agreed date).	
Hopes, W. and H., Lincoln, one block, £965 4s. (26 weeks); two blocks, £1,930 8s. (26 weeks); three blocks, £2,895 12s. (26 weeks); four blocks, £3,860 16s. (26 weeks).	
Jellings, R. S., Peterborough, four blocks, £4,075 (26 weeks).	
Maule, W., and Co., Nottingham, one block, £1,120 (13 weeks); two blocks, £2,220 (17 weeks); three blocks, £3,285 (22 weeks); four blocks, £4,350 (26 weeks).	
Morgan, J., Doncaster, four blocks, £4,080 (time to be agreed).	
Rouse, J., Stamford, one block, £1,133 (no time stated).	
Smith and Bunning, Kettering, one block, £1,050 (26 weeks); two blocks, £2,100 (26 weeks).	

* Accepted.

TULLAMORE.—For carrying out water and drainage works, for the urban district council. Mr. A. N. Asche, Council Offices, Tullamore, engineer:—

Water:—	
Murray, M., Athy	£148 10 0
Eustace, F. T., Tullamore*	142 9 9
Drainage:—	
Flynn, W., Killeigh	418 14 0
Cleary, M., Tullamore*	361 10 0
Portion of work:—	
Duffey, W., Tullamore	148 0 0
Goodbody, T. P. and R., Tullamore	99 17 6

* Accepted.

WANSTEAD.—For erection of a caretaker's cottage and making-up an avenue, for the urban district council. Mr. C. H. Bressey, surveyor:—

Dean, J. and J., Walthamstow	£530 0 0
Clemens, W. J., Stratford	499 0 0
Clemens Bros., East Ham	495 0 0
Woolaston and Co., Limehouse	485 0 0
Sharpin, W. S., Bow	482 0 0
Jagers Bros., East Ham	480 0 0
Walter, G. T., Barkingside	475 0 0
Robins, A. W., Wanstead	469 0 0
Russell, E. S., Leytonstone	449 0 0
Wilmott, F. L., Wanstead	427 0 0
Ballard and Hogwood, South Woodford	395 0 0
Osborne, T., and Son, Woodford	395 0 0
Jolliffe, J., Wanstead	386 0 0
Stark, F. C., Wanstead*	360 0 0

* Recommended for acceptance.

WEYMOUTH.—For supply of a petrol-motor (Hafield) fire engine and first-aid equipment, for the corporation:—

Merryweather and Sons, Ltd., engine £720, first-aid equipment £32 (accepted).

WOLVERHAMPTON.—For making up three streets for the town council:—
Holloway, A. (accepted) £3,100 0 0

ADVERTISEMENT CHARGES

The charge for Competition and Contract Advertisements, Public Companies, and all official advertisements is 1s. per line of eight words, the first line counting as two, the minimum charge being 4s. for four lines.

The charge for Auctions, Land Sales, and Miscellaneous and Trade Advertisements (except Situation Advertisements) is 6d. per line of eight words (the first line counting as two), the minimum charge being 4s. 6d. for 50 words. Special terms for series of more than six insertions can be ascertained on application to the Publisher.

SITUATIONS VACANT AND PARTNERSHIPS.

The charge for advertisements for "Situations Vacant" and "Partnerships" is One Shilling for Twenty-four Words, and Sixpence for every eight words after. All Situation Advertisements must be prepaid.

SITUATIONS WANTED.

Advertisements not exceeding Thirty Words, inclusive of name and address, are inserted under the heading "Situations Wanted," free of charge.

Rates for Trade Advertisements on front page, and special and other positions, can be obtained on application to the Publisher.

LIST OF COMPETITIONS OPEN.

Jan. 23—Workmen's Dwellings (102), Carr House, Doncaster	R. A. H. Tovey, Town Clerk, Doncaster.
Feb. 8—Designs for Workmen's Dwellings (500 persons), Rathbone-street Area, Liverpool. (H. Hartley, F.R.I.B.A., Assessor)	£100, £50, and £25 E. R. Pickmere, Town Clerk, Municipal Offices, Liverpool.
No date—Houses for Working Classes, Walthamstow (about £16,000)	C. S. Watson, Clerk, Town Hall, Walthamstow.

LIST OF TENDERS OPEN.

BUILDINGS.

Jan. 1-Cottage, Re-erection of, Seabries	Dundee Town Council	J. Thomson, City Eng., 91, Commercial-street, Dundee.
" 1-Properties, Improvements to, Nottingham	Estates Committee	A. Dale, City Archt., Guildhall, Nottingham.
" 5-Destructor, Additions to, Powderhall, Edinburgh	Corporation	J. Williamson, A.R.I.B.A., Public Works Offices, Edinburgh.
" 5-City Hospital, Residence at, Bierley Hall, Bradford	Corporation	The City Architect, Town Hall, Bradford.
" 5-Dwellings, Middle-street, Brompton	Gillingham Town Council	J. L. Redfern, Boro' Sur., Gardiner-street, Gillingham.
" 5-Market, Alicante	Municipal Authorities	The Com. Intel. Branch, Board of Trade, 73, Basinghall-st., E.C.
" 6-Caretaker's Cottage, Intermediate School, Porth	Glamorgan County Council	The Architect, Glamorgan County Hall, Cardiff.
" 6-Covered Way, Training College, Barry	Glamorgan County Council	The Architect, Glamorgan County Hall, Cardiff.
" 6-Labourers' Cottages (21), Claremorris	Rural District Council	The Clerk, Council Offices, Claremorris, Ireland.
" 6-School, Alterations at, Abertridwr	Glamorgan County Council	The Architect, Glamorgan County Hall, Cardiff.
" 6-Domestic Science Building, H.E. School, Caerphilly	Glamorgan County Council	The Architect, Glamorgan County Hall, Cardiff.
" 6-Six Workmen's Dwellings, Scarrington	Bingham Rural District Council	C. W. Kendrick, San. Sur., Bingham, Notts.
" 6-Mixed School, Glyncorrwg	Glamorgan County Council	The Architect, Glamorgan County Hall, Cardiff.
" 6-Infants' School, Glapynant, Whitchurch	Glamorgan County Council	The Architect, Glamorgan County Hall, Cardiff.
" 6-Shelter, Repairs to, Government Aero, Ramsgate	Corporation	T. G. Taylor, Boro' Eng., Ramsgate.
" 6-Infants' School, Porthcawl	Glamorgan County Council	The Architect, Glamorgan County Hall, Cardiff.
" 6-School, Hendreforgan	Glamorgan County Council	The Architect, Glamorgan County Hall, Cardiff.
" 9-Tate Public Library, Additions to, Streatham, S.W.	Wandsworth Borough Council	P. Dodd, M.I.C.E., Boro' Eng., 215, Balham High-road, S.W.
" 11-Ferro-Concrete Tobacco Warehouse, Bristol	Docks Committee	W. W. Squire, Eng., Cumberland-road, Bristol.
" 11-Dunraven Arms Hotel, Cwmgwrach, Glyn-Neath	E. Evans-Bevan	J. C. Rees, M.S.A., Parade Chambers, Neath.
" 11-Ambulance Shed, Additions to, Gallows Hill, Hertford	Joint Hospital Board	G. H. Gisby, Clerk, Town Hall, Ware.
" 11-Cottages (23), Leigh	Corporation	T. Hunter, Boro' Eng., Town Hall, Leigh, Lancs.
" 12-School, Dining Hall at, Napier-road, East Ham	Education Committee	R. L. Curtis, Archt., 11, Finsbury-square, E.C.
" 12-Station, Porthcawl, Glam.	Great Western Railway Co.	A. E. Bolter, Sec., Paddington Station, W.
" 12-Trinity Infants' School, Additions to, Coleham	Education Committee	W. Scott-Deakin, F.R.I.B.A., 12a, Pride Hill, Shrewsbury.
" 12-Schoolhouse, Additions to, Lawrence-st., Worlington	Education Committee	E. J. Hepworth, Sec., Education Offices, Worlington.
" 12-Houses (24), Barby-road, Ladbroke-grove, W.	Great Western Railway Co.	A. E. Bolter, Sec., Paddington Station, W.
" 13-Frederick Bird School, Enlargement of, Coventry	Education Committee	G. and I. Steane, Archts., 22, Little Park-street, Coventry.
" 14-Asylum, Workshops at, Wadsley, near Sheffield	West Riding Asylums Board	W. E. H. Burton, Archt., West Riding Asylum, Wakefield.
" 15-Durham-road School, Classrooms at, Newport	Education Authority	C. Ward, F.R.I.B.A., Boro' Archt., Town Hall, Newport, Mon.
" 15-Dispensary, Additions to, Eastbourne	Corporation	W. C. Field, Boro' Archt., Town Hall, Eastbourne.
" 15-Pumping Station, Shortlands, Kent	Metropolitan Water Board	The Chief Engineer's Department, Savoy-court, Strand, W.C.
" 16-School (64 places), Mossley-road, Ashton-under-Lyne	Education Committee	Eaton, Son, & Cantrell, Archts., Stamford-st., Ashton-u-Lyne.
" 18-School, Meon-road, Southsea	Portsmouth Education Com.	A. E. Cogswell, Archt., Prudential Buildings, Portsmouth.
" 19-Sorting Office, Herne Hill, S.E.	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
" 20-Hospital, Additions to, Mile End, Colchester	Borough Health Committee	H. Collins, A.M.I.C.E., Boro' Eng., Colchester.
" 23-Sanatorium, Ryehill, near Athenry, Galway	County Council	W. A. Scott, A.R.H.A., A.R.I.B.A., 45, Mountjoy-sq., Dublin.
No date-Villa, Pinfold-lane, Methley	H. B. Guise	T. Thompson, jun., Sur., Red House, Methley.

ELECTRICAL PLANT.

Jan. 2-Low-Tension Switchgear, Hornsey	Town Council	The Town Clerk, 99, Southwood-lane, Highgate, N.
" 6-Cable, Melbourne	City Council	McIlwraith, McEacharn, & Co. Pty., Billiter-sq. Bldgs., E.C.
" 6-Insulator Cups (50,000), Wellington, N.Z.	Public Service Stores Board	The Controller of Stores, Post Department, Wellington, N.Z.
" 6-Wall Telephones (3,000), Wellington, N.Z.	Public Service Stores Board	The Controller of Stores, Post Department, Wellington, N.Z.
" 6-Six Single-Phase Transformers (100k.v.a.), Melbourne	City Council	McIlwraith, McEacharn, & Co. Pty., Billiter-sq. Bldgs., E.C.
" 8-Lighting Gt. Brunswick-st. Police Barracks, Dublin	Parish Council	H. Williams, Sec., Office of Public Works, Dublin.
" 9-Guards to Electric Light Cable, Eastington	Municipal Council	W. Wigham, Acting Clerk, Eastington, Durham.
" 12-Three-phase Induction Motors (63), Shanghai	Corporation	Preece, Cardew, and Seall, 8, Queen Anne's Gate, S.W.
" 12-Electric Motors (One Year), Birkenhead	Municipality	G. P. Shallcross, Electricity Works, Cravea-st., Birkenhead.
" 12-Electric Lighting Plant, Mossel Bay		The Town Clerk, Mossel Bay, Cape Province, South Africa.
" 11-Telephones and Cables, Brisbane		The Deputy Postmaster-General, Brisbane.
" 27-Telephone Material, Adelaide		The Commonwealth Offices, 72, Victoria-street, S.W.

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Edinburgh House

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ROYAL ACADEMY WAR RELIEF EXHIBITION

It is a pleasure to announce that the first of the Royal Academy War Relief Exhibition, 1915, is now open at the Royal Academy, Burlington House, Piccadilly. The exhibition is a collection of works of art, including paintings, sculptures, and drawings, which have been donated by artists and collectors for the purpose of raising funds for the relief of the war-stricken. The exhibition is a most interesting and valuable one, and it is hoped that it will be a success.

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EXHIBITION OF BUILDINGS NEAR THE BATTLEFIELDS OF BATTLE

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are, in the vicinity of present battlefields of Northern France. The buildings are well described by Miss Elise Whitlock Rose, and the photographs have been specially and successfully taken by Miss Vida Hunt Francis. The volumes before us form the completing pair of the series by the same publishers. The books are uniform in size, and the rest contain similar illustrations of other leading Diocesan churches of France, together with their environments gathered from other districts of the country. Among the illustrations the courtesy of the publishers enables us to give, the new view of Rheims Cathedral has been lent to us by them from one of the earlier volumes of the series which appeared under the sub-title of the "Isle de France," and which covers a considerable part of the territory so ruthlessly devastated by the Germans. Our readers will be glad to possess this unusual photograph of the magnificent, but shamefully maltreated, cathedral church, and to remember that the series of volumes now complete on the lines of their original inception, afford a really admirable record of the cathedrals and cloisters of the West, East, and Southern districts, as well as those of the central provinces included in the Isle de France, and lastly of the Northern Departments.

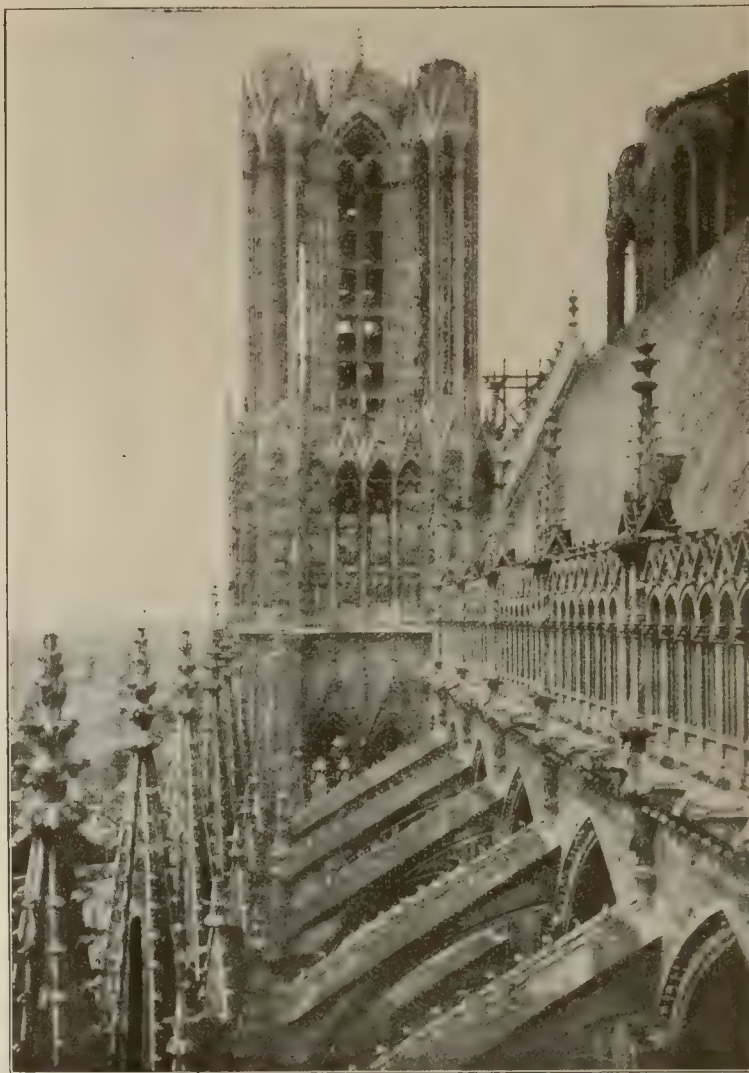
The two volumes which we have before us include a wide area, embracing Brittany, Alsace, and Lorraine, and the region on the Belgian frontier called of yore "The Gateway of the Kingdom." The descriptive pages are replete with dramatic stories of the past, and its grim experiences. It is hardly possible to explore the district without coming upon evidences of Maximilian of Germany, who "travelled to besiege" the capital of the Morini and who—unlike the Kaiser—spared "religious edifices," ruthless as was his destruction of all others.

Francis I. declared that Thérouanne and Aix-en-Provence were "the two pillows on which the King of France could sleep in peace." Thérouanne is no more. The quarrel of countries fought out again and again hereabouts was hotly renewed by Henri II. and Charles V. The astute Hapsburg began the last siege in 1533, and, in a fit of pique, utterly destroyed the little city twenty years later. The traveller can still see where the once famous city stood with its pure and beautiful Gothic cathedral long since brought to the ground, from whence all traces of the building have vanished. Its relics were translated to Saint Omer, including the gross huge group known as "The Great God of Thérouanne," which includes a colossal conception said to represent the Christ, the Virgin, and St. John. The central figure is seated on a fortress tower. Formerly it decorated the upper part of the transept wall; but now it is located level with the eye in the aisle of Notre Dame, where, of course, it looks singularly out of place, and inordinately big and ill-proportioned in this incongruous position. Cambrai, beyond Arras towards the south, is next noticed. Its cathedral has a Baroque façade of some character; but the writer describes the church as "the ugliest cathedral in France." In these days of reactionary fashions, taste is more than ever uncertain, and perhaps from this dictum of Miss Rose some will differ strongly, though we expect few will find much to admire in the grouping of Cambrai's graceless tower with its odd truncated spire. There are, however, some pleasing, palatial arcades between its side chapels, and the interior generally presents a fine notion for scale in an

architectural sense. Arras, the capital of Artois, has been termed the Nurnberg of France; but the comparison is not a happy one, because the city is far less quaint, and by no means so bustling commercially. Nor can it in other ways compare with the renowned German "maze of gabled streets." The rebuilding of the cathedral at Arras was commenced in 1755, on the foundation of the frequently rebuilt early abbey church of St. Vaast, demolished as insecure fourteen years earlier; it is Classical in style, after what professors in our modern architectural schools delight to call "the grand manner."

northern aisle. The interior of the church is enriched by many monuments, including the sarcophagus of Saint Erkembodius, and the florid tomb of a Bishop of Arras, Eustache de Croy.

The chapter on Normandy brings us pleasurable memories of many an architectural ramble round Evreux, Lisieux, Seez, Bayeux, Avranches, and eminent Coutances, none so well known but that most readers recognising old friends will all the more value the particulars furnished by the illustrations of some of the most beautiful buildings in these delightful places. The author is next busy with

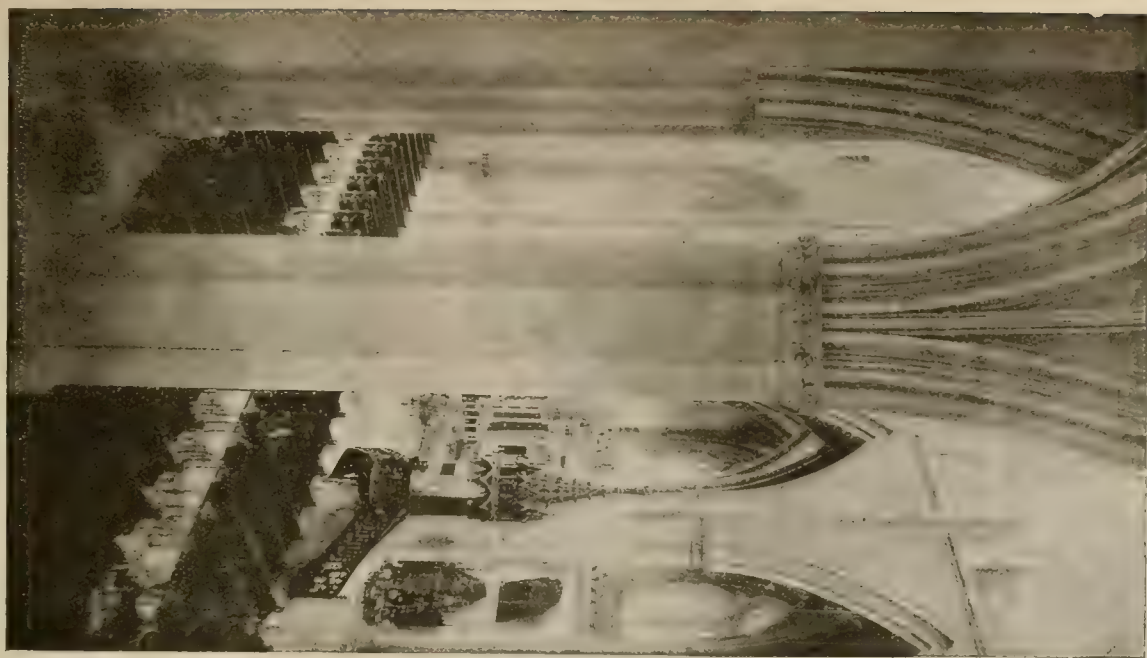


RHEIMS CATHEDRAL. ILE DE FRANCE.
Now demolished. View over South Aisle, looking West.
(By permission Messrs. Putnam's Sons.)

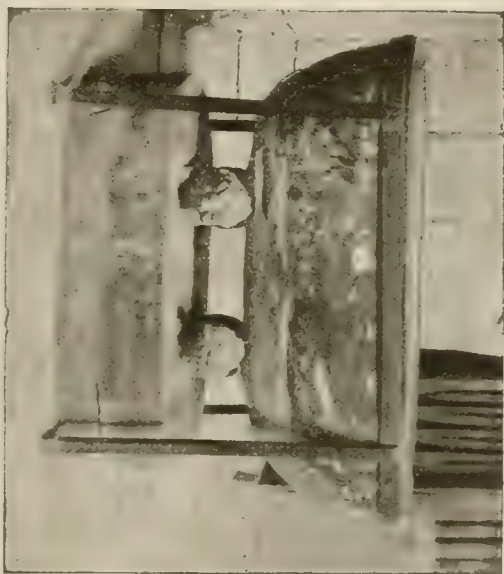
The vast Episcopal Palace, built in a like mode, is now used as a museum. Saint Omer is more noteworthy as possessing a cathedral of considerable charm. It boasts some noble portals; but, above all, it is distinguished by its fine tower, characteristic of the middle of the fifteenth century. Its designer, it is said, intended to surpass the famous Flamboyant belfry of Saint Bertin. In the base of the tower at Arras there is a remarkable portal inserted in 1514, and enriched with fanciful but decadent detail, including some traceried mural elaboration. "The doorway of the Holy Virgin," in the north transept, is marked by bold proportions, and has "The Last Judgment" sculptured in its tympanum. There is also a disused entrance at the end of the

descriptions from Brittany; but she goes back to spend a month at Dol, wandering about Chateaubriand's Castle at Combourg, and making outings among the quiet Breton villages and churches, and the old quarters of Rennes, enjoying a breath of sea air at St. Malo, where the granite island, with its grim castle and crowded houses, recalls the stirring scenes of bygone days. The long, narrow nave of Dol-de-Bretagne marks the standard of Gothic severity and purity of line structurally expressed, and the minor features of the cathedral are restrained and charming in their design. The "Little Porch" of Saint Samson is of the same character, the proportions and treatment of its double portal reminding one in a general way of North Italian design in brick and marble. From Dol we reproduce

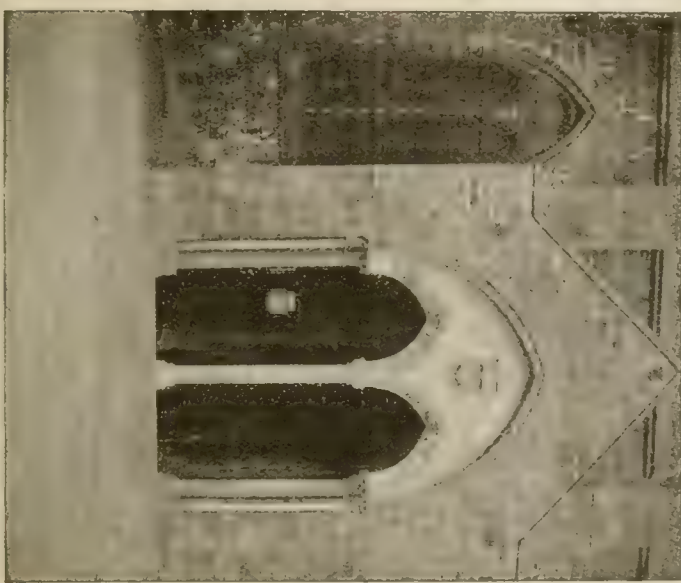
ECCLESIASTICAL BUILDINGS NEAR



TOUL CATHEDRAL: VIEW ACROSS NAVE.

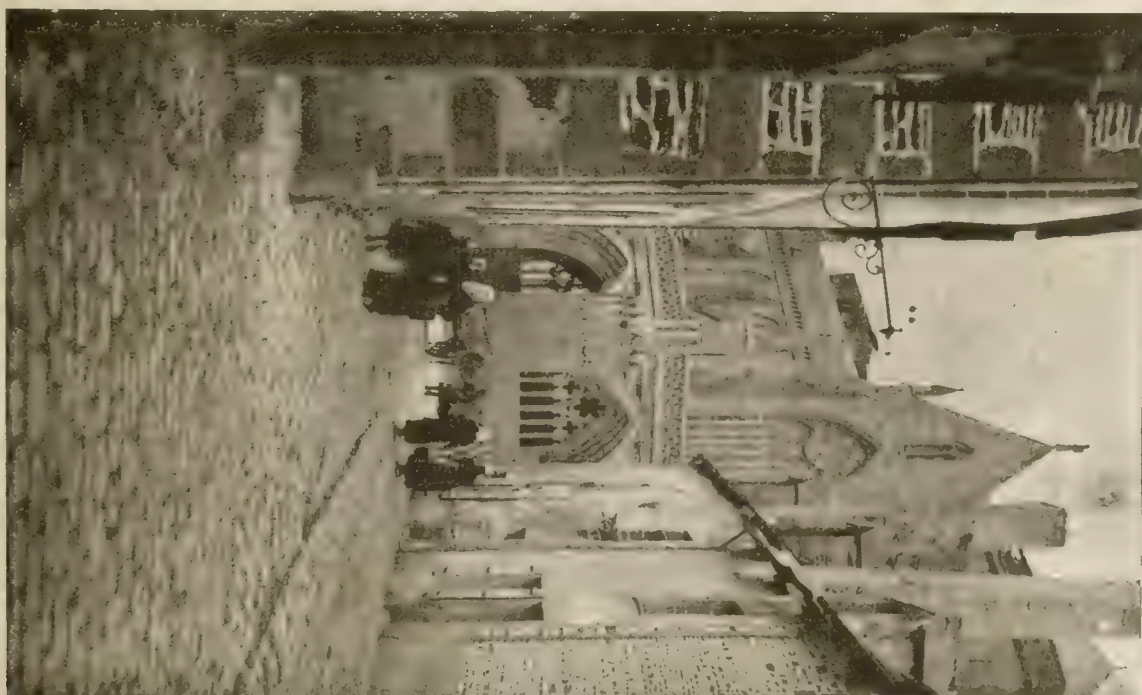


HOLY WATER STOUP, ANGERS.



LITTLE PORCH OF ST. SAMSON,
DOL DE BRETAGNE.

THE BATTLEFIELD IN FRANCE.



A STREET VIEW IN DOL, BRITTANY.

a street view looking towards a church porch with a flat roof and balustrated top stopping against a turret surmounting a big buttress on the angle. The companion view is of Dol Cathedral towers, as seen over the tops of some old outbuildings near a wayside café. The Cathedral of Rennes, not so far away south, is built up with superimposed orders in four tiers to its western front, set out in pompous formality of its style of the Renaissance, in strange contrast to the magnificence of the vast interior, so generous in its scale. Saint-Brieux, westward in the bay, and overlooking the English Channel, leads the way to Tréguier, possessed of a noble church and famous cathedral cloister, many suggestive details, and not a small company of tombs. Nearing the northernmost point of land's end in Brittany St. Pol de Leon repays the journey with its stately towers. Quimper, directly to the south, is in the valley of the Odet and Steir, happy in the setting of verdure and running streams, which feed the old waterways through the town. The massive cathedral, full of half-hidden crannies of aisle and side chapels so expressive of the adroit ingenuity of the Middle Ages, when mystery also suggested crooked streets and peaked houses enriching the skyline. Quimper is proud to show a pair of the most beautiful spires in the world. Vannes, after skirting Lorient, is our next halt eastward. It is a dull place, about ten miles from the sea, mildly dominated by a cathedral, once the parochial Church of St. Peter, with a west portal "made up" in 1875. The vaulted nave is broad and big, and not without an individuality of its own. Nantes reminds the visitor of a maturity completing a romantic experience and chequered history. The western porches of the cathedral are "due to the munificence of the high and mighty Duke of Brittany," and lead to the "very white and lofty nave" of seraphic purity and exalted aspiration.

The first volume is devoted more particularly to Northern France, and includes several of the districts already named, including Alsace-Lorraine, as represented by Strasbourg and Metz, each shown by capital views. We have, however, preferred to reproduce the grand interior of Toul Cathedral, a noble building, set off by an exquisite tower crowned by a tall belfry called the "Diadem," and built at the west end of the church. Its design is attributed to Jacquemin de Commercy; and however this may be, the architect had the good taste to cling to the Flamboyant ideals of what remained in the Mediæval traditional work, instead of going with the times when the Renaissance was taking the world by storm. Toul has a nave 177ft. high, and its setting out is spaced vertically into main arcade and clerestory, the vaulting groins springing rather low down and uniform throughout. The side aisles, as depicted in the accompanying photograph, have a clerestory and shallow alcoves fitted with altars or confessionals, the balustrated way suggesting a triforium in an uncommon sort of manner. The cloisters are spacious, beautiful, and thoroughly French. Fergusson, who used to be quoted more often than he is nowadays, gave his opinion that the Gothic of France was "the most complete and harmonious of all the Pointed styles, as well as the earliest," and few will quarrel with his dictum. Since the disaster of 1870, Verdun has acquired the importance of a frontier fortress, and now that the map of Europe is in process of rearrangement it is impossible to say what ultimate changes may be developed, particularly eastward of the Meuse and the road from

Rheims to Metz. The Cathedral of Verdun, begun in 1136, was carried out from the plans of Garin, a pupil of Rhenish masters. He was compared to "Hiram of Tyre, who produced the Temple of Solomon," by Laurence of Liège. The building has been much modernised. Its interior has a triple nave, with Gothic vaulting of the thirteenth century added to the thirteenth-century structure. The "Sacraire" and portals were built at the later date. Flamboyant insertions supply grace and piquancy to the windows and cloisters. Verdun was the Roman Verdolunum, and it was taken by the Prussians in 1870. Verdun-sur-Meuse, with Metz and Toul, gave the name of Les Trois Evêchés to this part of Lorraine. The mediæval gateway, flanked by round towers by the bridge, looks at home surrounded by so much that spells war. Priceless, magnificent tapestries are suspended from the nave walls in Angers Cathedral, which has no side aisles. The appearance of the building resembles a minor edition of Angoulême not without elegance; but the Rocco baldachin, or altar-piece, clutters up the small choir, and the organ of like character, looks incongruous in the north transept, which was completed in 1240. The twin towers of the west front are very Rhenish in arrangement. We illustrate the Holy Water Marble Font, resting on crouching lions said to have been given by King René.

Laval, like Vitré, Fougères, and Mayenne, rises above ravines and grows into prominence among the gorse on the slopes of the hills in the borderland of Frères Cottereau, also the implacable Chouans. The Chateau at Laval, with its castellated donjon commanding the river and facing the bridge, reminds those who stay there of the "Hundred Years' War"; but the town itself, in normal times, is a peaceful place enough. The bishopric was only "created" in an orthodox fashion in 1855. The cathedral, dedicated to "The Trinity," is set upon the summit of the hill, well away from the bustle and noise of the town. This church was possibly chosen for Episcopal importance as being above the world, and not of it. As a building it does not show to advantage, and its grey, monotonous outline lacks nobility and impressiveness. Within its doors several styles, instead of blending in the mellow effect of age, conflict in abrupt juxtaposition.

Sufficient has been said to indicate that these volumes are both informing and entertaining. Miss Whitlock Rose makes little effort to grapple with matters of technical importance, and, consequently, the risk is avoided of being considered overwhelming as, perhaps, an architect might have been with so much matter to handle. On the other hand, by introducing some happy sidelights she has illuminated her work and impressed it with individuality of treatment. A good map at the end of Volume 2 shows the places described, distinguished by a cross, to facilitate reference.

BUILDINGS IN THE WESTERN WAR AREA.

A lecture on "Belgium and Northern France, as they Were and as they Are," was given at the Camera Club, John-street, Adelphi, on Thursday evening in last week, by Mr. E. W. Harvey Piper, Hon. M.S.A. The chair was occupied by Mr. C. Robbins. The address was illustrated by over one hundred lantern-slides of the buildings, towns, and villages described. Having crossed from Dover to Ostend, a map of the Western war area was thrown on the screen, and the successive phases of the conflict were rapidly indicated. From the original breach, at the beginning of August, of her solemn

treaties with Luxembourg and Belgium to the close of the year, Germany had trampled upon every engagement, and had evidenced a callous disregard for the solemn obligations of the Hague Conference, to which she had given her pledge. Her wilful and intentional destruction of the most venerated, most beautiful, and most historically-interesting buildings in Belgium and France; her malicious reduction to a desert of all the fertile lands ravaged by her troops; and, blackest of all crimes, her unspeakably vile treatment of the men, women, and children within her clutches, were ineffaceable blots on the Germans, from the Kaiser and his pilfering son to the lowest-born refuse of the nation. Their invasion of Belgium was a clarion call to peace-loving Englishmen to take up the long-discarded sword, and in the name of humanity to go forward with set faces against a foe whose use of the name of the Almighty added blasphemy to a category of infamous sins. From the romantically-situated little city of Luxembourg the lecturer took his audience to the village of Visé, showing it as burnt and ravaged by the invaders, a solitary building—a convent—remaining habitable; and thence to Liège, the Birmingham and Sheffield of Belgium, beautifully seated at the junction of the Meuse and the Ourthe, and from the western bank of the larger river rises the steep limestone rock crowned by the old citadel. On the hillside in the Place St. Lambert, opposite the garden formed on the site of the old cathedral destroyed in the Revolution of 1798, is, or, rather, was, the magnificent Palais de Justice, once the archbishop's residence, rebuilt in red brickwork in 1533 in the Renaissance style. Within were two open courtyards, surrounded by quaint arcades, supported by bulging and banded pillars, all varied in the carving, carrying several stories of brickwork. These arcaded courts were a delight to all artists and photographers; but the entire palais was destroyed by the Germans during the fierce siege in August last, together with the University buildings lower down the hillside, and several of the thirty old churches. That of St. Paul's, formerly attached to the abbey, and now the cathedral, remains, and against the walls of the south aisle and transept the invaders ranged many of the townsmen seized as hostages, and shot them in revenge for the defence of the city by which their progress was checked. The choir of the cathedral is good work of 1280; but the nave was rebuilt nearly 250 years later, in a florid type of Early 16th-Century Gothic. The exterior effect of the cathedral is disfigured by the tower and spire, built in 1812, on the foundations of the old steeple at the west end. Much fine work, showing some Spanish feeling, contemporary with the cathedral nave, is to be seen at the ornate church of St. Jacques, where the arches in the nave between the cloistered piers are richly carved, and the apse contains (or contained till lately) good stained glass of the time of its rebuilding in 1520. It was restored nearly twenty years ago. Several buildings in the Grande Place of Brussels were shown, including the Hotel de Ville, the most splendid of the municipal palaces in the Low Countries, built in two well-harmonised sections in 1401 and 1454; the lofty and well-proportioned tower and spire, the main façade above the arcade encrusted with statued niches and other ornamental details, and the high mansard roof, with its four tiers of dormer windows, all enhance the magnificent effect. On the opposite side of the square is the Maison du Roi, now the Burgomaster's residence, built in the Late Gothic style of 1525, and largely refaced during the restoration of five-and-forty years ago. Facing the square are numerous halls, formerly belonging to the merchants' guilds, built during the Spanish occupation, and now converted into shops and offices. They were restored, painted, and gilded about twenty years ago, under the direction of M. Buls, a Brussels architect. Termonde was till recently a prosperous little town at a busy railway junction, remembered best by its execrable cobble-paved streets, its 14th-

century spire and projecting Renaissance front to the museum; its fine town-hall, with gabled façade and lofty central tower, square and unbuttressed, and its principal church of Notre Dame, which contained a square font of black marble, of the type of those in Winchester and Lincoln Cathedrals, and at St. Peter's, Ipswich. The steeple of the museum, the town-hall and its lofty tower have been destroyed, and the church is gutted and roofless, on account of the failure of the townsfolk to pay the enormous ransom sought to be extorted by the Germans. Views of the church and of the convent chapel near by were shown upon the screen, as well as blocks of buildings "stormed at with shot and shell" and set on fire with petrol, after being ransacked. In a square near the market hall was seen the bronze statue of the Flemish poet, Prudens Van Duyse, who died in 1859, with a background of burnt-out buildings; the base and the space within the protecting railings were littered with broken wine-bottles and their cases, left by drunken troopers. The lecturer proceeded next to the charming little town of Alost, widely known for its hop and linen markets. Here, in front of the fortress-like Early 13th-Century hotel de ville, on a very cramped site, was a small and ornate church, rebuilt in 1500, after a fire; and before it again was a bronze statue in costume of Dirk Maertens, the first man in Flanders or Holland to set up a printing press, who was born in the town and is buried in the church. Both church and town-hall, together with the monument, forming a unique and picturesque group, have been wantonly demolished, together with all the surrounding houses, by the marauders, to whom no opposition had been, or could have been, offered. Still less defensible was the entire destruction, after pillage and murder of the inhabitants, of the decayed village of Dinant, which nestled under the limestone cliffs in a deep and narrow gorge of the Meuse. Celebrated for generations as the manufactory of the delightful wares in wrought copper and brass called dinanderie, in this secluded town the population had dwindled from the sixty thousand of the 15th century to eight thousand. Since the bombardment and arson less than sixty houses have been left for the use of the German garrison, the bridge across the stream has been blown up, and the famous 13th-century church has been unroofed, and its western towers and the central bulbous spire, rising from the crossing to a height of over 200ft., destroyed. Illustrations of the village as it appeared in July and in August last brought home the ruthless character of the invasion, under Col. Beeger. The treatment of the quaint and quiet university city of Louvain was, if possible, worse, and raised a storm of execration against General Manteuffel throughout the civilised world, it being realised that by its wanton destruction mankind had been deprived of much that tends to refine, instruct, and elevate. The city, many sizes too big for the dwindling population, occupied, with its broad streets, the centre of a flat, oval dish, the sides being made up by the grassy ramparts, once fortifications, but long disused. In the central space was the lofty-turretted and pinnacled hotel de ville, which happily remains intact, and to the west of this was the huge cruciform church of St. Pierre, built of soft, crumbling stone, and having an ambitious western tower, central fleche, and southern porch, all alike unfinished; naturally one was impressed by the French character of the choir, which was lofty and surrounded by a series of separately-roofed chapels, built up between the buttresses; the chief features were the Flamboyant rood-screen (1488), richly carved and carried on three flat oggee arches, with deep cusplings; the twelve-branched candlestick by Quentin Matsys, the fine stalls, and the ungainly oaken pulpit, the work of Joseph Bergen in 1762. The church itself dates from 1423, when it was rebuilt from designs by Sulpice Vaast; the town-hall was some thirty years later, and had as architect Mathieu de Layens. To the south of these buildings, on the west side of the Rue de

Namur, was the University, which was housed in the former Cloth Hall, a 12th-century building, with plain modern front, containing on the floor above the great hall a priceless library of manuscripts and early printed books. St. Pierre is now a roofless ruin, every fitting having been destroyed, and of the University building, with its stout Romanesque stone columns and oaken staircase, nothing remains but crumbling masonry. The Kaiser alleged that his heart bled for Louvain; but his troops, immediately after his disclaimer was published, proceeded to commit further outrages and to destroy historical buildings in the archiepiscopal city of Malines, where the lofty unfinished cathedral tower furnished a target for German cannon, the walls and arcades of the cathedral being riddled, the circular columns and the Apostles' statues carried on them brought down, and the stained-glass windows smashed. The former and present conditions of the cathedral were illustrated on the screen, as was also the great Baroque church of Notre Dame d'Hanswyck, built in 1670 from designs by Faidherbe, and now unroofed and utterly ruined. Following the pathway of the invaders from Belgium into France, the lecturer drew attention to the greater delicacy and refinement in the architecture, the increased skill in planning, the better sense of dignity in proportion observable in the French buildings, as contrasted with the vigorous and often coarse and over-ornamented work to be seen in Flanders. The Belgian churches and town-halls were manifestly provided by prosperous merchants, who lavished their wealth freely on the chief buildings of the towns they loved, and in which they had made their money. Those of France were the work of men of taste and refinement, who thought out every problem with care, and who were also consummate engineers, who learned by long consideration just how to obtain the internal effects they aimed at in their churches—clear, unobstructed height, good proportions, a polygonal east end, spacious openings in the walls to be filled with stained glass, and at the west end deep triple portals to contain tiers of sculpture and less ambitious doorways of like character in the shallow transepts. In the larger churches chapels were thrown out of the aisle walls, and were ultimately connected with each other, the lofty walls and stone roofs being supported by piers, buttresses, and flying arches. Proceeding with illustrations of the war, satisfaction was expressed that the attempt to destroy by a bomb Notre Dame in Paris failed, the damage being confined to easily-reparable injury to the north transept roof. In the little village of Bercy, near Senlis, the post-office, the 13th-century church, and many houses were ruined. At the dead-and-alive city of Senlis the railway station and many of the larger villas were shelled and gutted by fire, and the mayor and other hostages were shot; but, contrary to the statements that appeared in the English Press at the time, the beautiful cathedral was spared, owing to the pleadings of a priest; the injuries were confined to the loss of a few gargoyles, pinnacles, and portions of parapet, and a couple of holes in the outer roof. But no instance of German savagery shocked the world so greatly as did the brutal and absolutely unprovoked bombardment again and again of Rheims Cathedral, the scene of the coronation of the Kings of France, the most perfectly-proportioned edifice in the world, the church containing the finest Medieval sculpture that had come down to our day, and some exquisite stained glass. This magnificent edifice (to which a large proportion of the lantern illustrations were devoted), a veritable Lamp of Beauty, was rebuilt, as it was seen until this autumn, after a fire between 1212 and 1430. During these two centuries half a dozen generations of builders, sculptors, and stained-glass workers vied with each other in completing and ornamenting the fabric according to the original design, very little modified to suit the changing phases of fashion. The distinctive features of the cathedral were its exquisite proportions, the purity and sim-

plicity of its style; the seven towers, five of which (that over the crossing and those attached to the junctions of the transepts with nave and choir) were truncated after the disastrous fire of 1481; the beautifully-proportioned Angel Fleche, added to the eastern termination of the choir roof in 1521; the angel in a canopied niche surmounting each external pier, between the bays; the magnificent western portals, having in place of sculptured tympana, rose windows, filled with stained glass; the two earlier and grand portals in the north transept; and the 13th-century sculpture and stained glass throughout the edifice. The cathedral was the Westminster Abbey of France, for here, with three exceptions, all her kings, from the days of Clovis to Charles X., were crowned; but in dimensions, proportions, and adornment it far outshone our Abbey. The climax of historic interest was reached in 1430, when Joan of Arc, after raising the siege of Orleans, came here clad in armour, and bearing in her hand her banner, and she then "assisted" at the coronation of the unworthy and half-reluctant Charles the Seventh. The lecturer showed and described in detail the sculptures in the five portals, and demonstrated by photographs the present condition of the cathedral, which retains its stone roofs, but has lost its outer wooden covering and all its fittings and furniture, while much of the statuary and carving has been calcined and other portions injured by shrapnel and rifle bullets. The Early Romanesque abbey church of S. Remi, in the Seamstresses' Quarter of the city, a mile to the south, was also seen, its 11th-century western towers, broad 12th-century nave and apsidal choir, and Flamboyant south transept being inspected, and also the wide and lofty interior; this perfect example of Early French Gothic has suffered severely during the bombardments, and it is to be feared that when the Germans are finally driven from the neighbourhood of Rheims the German commander will fulfil his threat and destroy, so far as he can, both cathedral and abbey church. Passing through a bombarded suburb of Douai, interesting as the scene of many sieges, as the town where the English version of the Old Testament for Catholics was translated and published, several views of Antwerp were shown, including the hotel de ville, a dignified Italian Renaissance building of 1565, having the Five Orders superposed on the main façade, and obviously the source of inspiration of Mr. Bodley's London School Board Offices on the Victoria Embankment; the stately bronze fountain surmounted by a statue of the hero Brabo, who defeated the giant Antigonous—a handsome addition to the Grande Place erected in 1887 from the designs of Lambeaux; the seven-aisled cathedral, with its piers without capitals and blind triforium, two usual faults in great Belgian churches. From a survey of the destruction wrought in the village of Melle, hitherto only known to most tourists as an uninteresting railway junction, the lecturer moved on another four miles into the historic city of Ghent, where the 13th-century belfry, the much-restored cathedral church of St. Bavon, the hotel de ville, a felicitously harmonised conjunction of Florid Gothic and Renaissance in two sections of the same building, and the castle of the Counts of Flanders, recently restored almost out of recognition by De Waele, were successively seen. The city of Bruges, its belfry old and brown, its quays, churches, Palais de Franc, and hotel de ville were passed under review, and the scene was shifted to Arras, the capital of the North-Eastern Department of France, which has suffered terribly by bombardment. Gone is its magnificent hotel de ville, built in 1510 in a Venetian phase of Early Renaissance, having a highly-ornamented flat façade and a central square tower, which was cleverly merged into an octagonal form in the upper stages, ending in an open imperial crown; reduced to roofless, windowless shells were also the cathedral, the belfry tower, and the theatre in this busy industrial centre. The town of Furnes, with its churches and Renaissance town-hall, is of interest as the only one in

Belgium which has not fallen for a time into the hands of the invaders. The massive brick tower of the church at Nieuport was seen as shattered by German shell, and the trim villas and church of Pervyse have suffered still more, as the village has been taken and retaken a dozen times alternately by invaders and defenders. Dixmude also, as might be expected, has suffered almost as much; the church of St. Nicholas, which had a noble tower and contained a Flamboyant rood-screen of Early 16th-Century character, has been almost destroyed; the trim and rather commonplace new hotel de ville by M. Louis de la Censerie, of Bruges, has lost most of its front wall, and the railway bridge has been blown up. The concluding slides illustrated the city of Ypres, before and since its bombardment, its unrivalled Cloth Hall, the interesting hotel de ville, with arched vegetable market beneath, and the cathedral church of St. Martin, which, together with many of the picturesque half-timbered houses, have been destroyed by the direct orders of the Kaiser. Many of the edifices they had seen that evening would probably be restored when the invader was driven back and compelled to sue for peace; but their historic value, their charm, beauty, and picturesqueness, all that gave them importance and interest, had vanished for ever, and future generations would execrate the name of William II., the last of the Kaisers, and would justly regard him as an enemy to mankind.

A vote of thanks to the lecturer was proposed by Dr. G. de Lacey, a Belgian refugee, late of Heyst-sur-Mer, and was seconded by Mr. S. G. Gamble, and supported by Mr. A. D. Mitchell, Mr. J. Keane, and the chairman.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

BOARD OF ARCHITECTURAL EDUCATION.

The following are the problems in design set by the Board for Subjects XIX., XX., and XXI.:—

THE FINAL: ALTERNATIVE PROBLEMS IN DESIGNS. Instructions to Candidates.

1. The drawings, which should preferably be on uniform sheets of paper of not less than Imperial size, must be sent to the Secretary of the Board of Architectural Education, Royal Institute of British Architects, 9, Conduit-street, W., on or before the dates specified below.

2. Each set of drawings must be signed by the author, and his full name and address, and the name of the school, if any, in which the drawings have been prepared, must be attached thereto.

3. All designs, whether done in a school or not, must be accompanied by a declaration from the Student that the design is his own work, and that the drawings have been wholly executed by him. In the preparation of the design the Student may profit by advice.

4. Drawings for subjects (a) are to have the shadows projected at an angle of 45° in line, monochrome, or colour. Drawings in subjects (b) are to be finished as working drawings. Lettering on all drawings must be of a clear, scholarly, and unaffected character.

Subject XIX.

(a) A Memorial to Lord Roberts overlooking the training ground of a garrison city, on a low hill rising with a general inclination of one in five. The Memorial is to stand on the summit of the hill upon a level plateau, about 80ft. in diameter. The height of the Memorial is not to exceed 120ft.

Drawings.—General plan to 1/4in. scale. Detail plan (so far as may be necessary), elevations and sections: scale optional.

(b) A Garage for a Large Country Mansion. Provide for four owner's and four visitors' cars, and washing place; residence for chief chauffeur, and sleeping accommodation for four visitors' chauffeurs. Provide also accommodation for artesian well, pump, and water tower, to supply the mansion; electric lighting and power plant, engineer's workshop. Heating, fuel store, and incidental requirements to be provided. The site is not limited; the courtyard type of plan is suggested.

Drawings.—Plans, elevations, and sections to 1/4in. scale, and 1/2in. detail of a portion.

Subject XX.

(a) A Facade for an important firm of Fine Art Publishers, in the principal street of a capital city. Width of site, 36ft. (between buildings). Height not to exceed four floors above pavement line; there is to be a shop front on the ground floor, and a separate entrance to a fine art gallery on the first floor. The facing material to be generally of stone, but brick is not to be used.

Drawings.—Plans at ground and first-floor levels, showing arrangement of facade; elevation and section. All to 1/4in. scale.

(b) A Detached Swimming-bath for a boys' public school. Bath not to exceed 70ft. in length.

Drawings.—Plan, elevations and longitudinal section to 1/4in. scale, and a cross section through bath to 1/2in. scale.

Subject XXI.

(a) A Band Stand in a public park to accommodate 20 performers. To be arranged as a large alcove in connection with a colonnade.

Drawings.—Plan, elevation, and section to 1/4in. scale. Details to 1/2in. scale.

(b) A Hostel for Male Students on a detached suburban site to accommodate 30, and to include a suite of rooms for married warden.

Drawings.—Plans, elevations, and sections to 1/4in. scale.

DATES FOR SUBMISSION OF DESIGNS IN 1915.

	Subject XIX.	Subject XX.	Subject XXI.
United Kingdom	Feb. 27	April 30	June 30
Johannesburg	April 30	June 30	Aug. 31
Melbourne	May 31	July 31	Sept. 30
Sydney	May 30	July 31	Sept. 30
Toronto	Mar. 31	May 30	July 31

OBITUARY.

Among the principal works of the late Mr. W. Newton Dunn, F.R.I.B.A., of Bucklersbury, E.C., whose death was recorded in our last issue (p. 4), were the Board of Works Offices, East Hill, Wandsworth (near the town-hall of the Wandsworth Borough Council); Streatham Cemetery chapels and lodges; new front and baptistery, St. Mary's Church, Balham; Eversley Ladies' School, Folkestone; and numerous private houses in various parts of the country. Thirty-six years ago Mr. Newton Dunn joined the Livery of the Haberdashers' Company, for which body he was chosen as junior warden in November, 1912. At the end of his year of office he was raised permanently to the Court. The practice will be carried on by Mr. Gerald M. Dunn, the name of the firm, W. N. Dunn and Son, remaining unaltered.

The death, in his ninetieth year, of Mr. William Strutt, R.B.A., occurred on Sunday, at his residence, "The Angelus," Wadhurst Sussex. The veteran artist, whose most popular work was "Peace: a Little Child Shall Lead Them," worked almost to the last. Mr. Strutt represented one of four generations of artists. His grandfather, Joseph Strutt, was author as well as artist and engraver. The second was William Thomas Strutt, the miniature painter, and there is still with us Mr. Alfred W. Strutt, of Oldham, the son of the artist who has just died, who is himself well known as a painter. The four generations have contributed 114 pictures to the Royal Academy since 1760, and of these Mr. Alfred W. Strutt can claim over fifty.

Mr. William Robert Galbraith, of Finchley-road, South Hampstead, civil engineer, who died on October 5, aged eighty-six, left £88,879 gross.

The Leeds National Relief Fund has received a contribution of £50 3s. from the members of the Leeds and West Yorkshire Architectural Society.

The late Mr. Edwin Arthur Johnson, F.R.I.B.A., of Derrystone, Abergavenny, who recently died, aged 58 years, left gross personally amounting to £40,181.

The Swansea Corporation are about to round off the awkward corner at the junction of Castle street and Temple-street, at a cost, for acquisition of properties and for road making, of about £12,000.

Mr. Francis Harrison Goodhand, head of the firm of Hewins and Goodhand, builders and contractors, Grimsby, died on Sunday, in his sixty-fourth year. The firm had had a large share in assisting Grimsby's modern development.

The Birmingham Corporation Art Gallery has been enriched by gifts of a large miniature painting on ivory of Lady Scott, of Great Barr, by Robert Thorburn, A.R.A., a water-colour drawing on silk, entitled, "The Val Solda," by Charles M. Gere; and, a pencil drawing by Sir John Tenniel, entitled, "One Touch of Nature."

The proposal to widen the roads of only 9ft. or 10ft. wide throughout the district came before the Isle of Axholme Rural Council at their meeting held at Epworth. The surveyor presented a list of these roads, and estimated the cost of adding 3ft. to the width, where practicable, would be about £120 per mile. Of equal importance would be the alteration of some of the narrow right angle, and often blind, corners which existed on several of the through roads in the district. It was agreed to further consider the matter in committee.

COMPETITIONS.

VANCOUVER, B.C.—November 30 was the closing date for submitting competitive designs for the proposed Civic Centre at Vancouver. Mr. Thomas Adams, F.S.I., late an inspector under the Local Government Board, London, who recently accepted the post of town planning adviser to the Canadian Commission of Conservation, has been appointed as assessor. The authors of the designs placed first and second will be awarded premiums amounting to 500dol. and 250dol. respectively.

WATER SUPPLY TO SOMERSETSHIRE VILLAGES.—At their last meeting the Clutton Rural District Council considered the question of a water supply to certain parishes, including Chew Magna, Chew Stoke, and Stanton Drew, and it was agreed to advertise for schemes, the council offering a prize of £100 for the best scheme and £50 for the second best.

Mr. Edward Bayzand Ellington, of Addison-road, Kensington, a former President of the Institute of Mechanical Engineers and founder of the General Hydraulic Power Company, who died on November 10, left £15,551.

Mr. George L. Pepler, F.S.I., Local Government Board inspector, conducted an inquiry at Sidford on Friday into an application by the Honiton Rural District Council for authority to prepare a town-planning scheme referring to an area in the parish of Salcombe Regis. There was no opposition.

The River Wear Commissioners have granted Messrs. Sir James Laing and Sons permission to carry out new work at the Cornhill Graving Dock on the north side of the river. The new works will include the reconstruction and enlargement of the existing Cornhill Graving Dock, so as to give a length of about 450ft., a width of about 60ft., and a depth on the sill of 5ft. on low water O.S.T.

At the last meeting of the Lancaster Town Council authority was given for fitting up the hospital as a tuberculosis sanatorium for twenty patients. Further steps were taken for securing a new road at the north end of the town. The cost is estimated at £3,266, exclusive of £600 for land purchase, towards which the Road Board will contribute £1,089, and the county council £1,451. It was reported that sanction had been given by the Local Government Board for the Skerton Bridge scheme at a cost of £2,100, and for repaving North road at a cost of £1,050.

Mr. Francis Hooper, F.R.I.B.A., writing to the *Times* from Norfolk House, Norfolk-street, W.C., as to the treatment of prisoners of war in Germany, states that his son has received each of the four parcels despatched to him, either at Torgau or at Burg. Mr. Hooper strongly urges strict observance of the regulations published by the authorities in regard to mode of address and enclosures. He adds that, when wounded, his son made no complaint of want of care by the enemy, and that he was recently moved to Halle, where he has met his major, who gives similar experience.

There being a dearth of dwellings at Ledbury, the Ledbury Urban District Council applied to the Local Government Board for sanction to borrow £3,000 for the purchase of an acre of land at the bottom of Belle Orchard for £200, and for the erection of thirteen workmen's dwellings thereon. Mr. W. H. Collin, Local Government Board inspector, held an inquiry on Friday at the Barrett Browning Institute to receive evidence. It was stated that the rent proposed to be charged for the new dwellings, which would have ample accommodation, was 4s. 6d. per week, with rates. There was no opposition to the scheme.

Work on the second largest bridge yet constructed by British engineers that across the main Ganges at Sara, in Bengal—has just been completed. The manager of the Eastern Bengal State Railway crossed the bridge by train yesterday (Thursday), and an immediate service of goods trains is to be arranged for. The bridge is not to be opened to passenger trains till March, since it would serve no useful purpose until the metre-gauge of the lines on the northern side is converted to the 5ft. 6in. width of the southern. Training-works 5,000ft. long down both river-banks, which were designed at a cost of three-quarters of a million sterling, keep the river to its course through the bridge. The bridge, which has a total river-length of 5,900ft., or, including land approaches, measures fifteen miles, has cost roughly three and a quarter millions sterling.

Corrente Calamo.

An initial difficulty arose at the outset of the proceedings at the business general meeting of the Royal Institute of British Architects on Monday last, when Mr. Max Clarke's resolution came on for consideration—viz., "That the Austrians and Hungarians, seven in number, now enemies of the King, whose names appear in the 'Kalendar' for the present session, on page 231, cease to be members of this Institute and their names be removed from the list of members. And also that the Germans, eight in number, now enemies of the King, whose names appear in the 'Kalendar' of the present session, on page 232, be dealt with in a similar manner." It appears that neither the Charter nor the By-laws provide any method by which such an expulsion on account of war could be carried into effect, and the Council were of opinion that nothing in this direction could be effected in the absence of an authority from the Privy Council, the Institute being neither a social club nor a political society. The matter was discussed at some length, and an amendment was formulated to the effect that any such steps as those contemplated by the proposition would be ill-advised. Although no difference of opinion was evinced in regard to the wanton destruction of architectural remains and historic buildings, both in France and Belgium, by the German armies, the voting on the resolution resulted in "no order," inasmuch as the votes recorded a tie. Consequently, it became incumbent on the President, Mr. Ernest Newton, A.R.A., to give the chairman's casting vote, which he did against the proposal, and when the amendment was put as a substantive motion it was carried by a majority of one in a thin meeting of something like thirty members. We think the majority of members and readers generally will regret that the Council have found themselves barred from dissociating the R.I.B.A. from its connection with those who, whatever their individual sympathies or opinions may be, are responsible for the outrages committed by their national authorities.

There are some hopes—if the promise is kept—that the unfair claims for Increment Value Duty which have been served upon builders and other property owners where sales of property have shown a profit taxable under the Lumsden judgment, will not be pressed. Captain Pretymann has received the following letter from Mr. Lloyd George:

"I am afraid the Government could not possibly see their way to suspend the assessment and collection of Increment Value Duty generally; but they are prepared to instruct the Inland Revenue to hold in abeyance cases in which the relief claimed by the taxpayer is such as would have been granted under the legislation promised by the Prime Minister. Such cases could then be allowed to stand over until a date to be hereafter fixed.

"Special consideration will, of course, be shown in the case of persons liable to Increment Value Duty who are serving with H.M. Forces.—Yours sincerely,
"D. LOYD GEORGE."

We still fail to understand why the legislation promised by Mr. Asquith could not have been speedily passed, and the disastrous results which have so grievously afflicted builders avoided once and for all. Too many of us, we fear, remembering previous experiences, will still hesitate to put much faith in Mr. Lloyd George's good intentions!

The Council of the Society of Architects has had under consideration a proviso which the members of the Institute of Builders had

been advised by their Council to endorse upon all tenders for future building operations. It was to the effect that the tender was based upon the rates of wages and materials prior to August 4, 1914, and that any advance in the cost of labour and material should be added to the amount of the contract, and an extension of time be given where any difficulty was experienced in obtaining labour and material. The Council of the Society were unable to accept the clause as worded, and suggested that it should be modified so as to provide that the tender was based upon the normal rates of wages and materials prevailing at the date of sending in the tender. Any advance in cost which shall be proved to the satisfaction of the architect to be unavoidably and exclusively due to war conditions, to be adjusted at the completion of the work. Likewise any deduction in cost of materials after the date of the tender to be also adjusted at the completion of the work. Notice to be given by the contractor to the architect of any fluctuation in prices affecting the contract immediately it occurs. Any delay in the delivery of materials or goods, due exclusively to the same cause, to be the subject of a reasonable extension of time. But these conditions shall not relieve the contractor of his obligation to protect himself and guard against increased prices by placing his orders for materials in the early stages of the contract. The architect's decision on all matters arising out of these conditions (or endorsement) to be final, and binding on all parties concerned, and without appeal. The Institute of Builders has intimated that the extent to which the Society has met the views of the building trade has been noted and conveyed to the members of the Institute of Builders, the National Federation of Building Trades Employers, and the London Master Builders' Association.

The Estate Exchange Statistics for last year show a decrease of nearly two millions sterling in the total aggregate realisations, as compared with that of 1913. But this was to be expected, for though the first half of 1914 gave good results, and hopes were rising everywhere, the coming of war in early August at once blocked business. We were then about getting over the worst effects of the Great Budget, and the succeeding land agitation as to ground values and taxation. Suddenly all was stopped; yet there are some good points to be noted, even in the gloom. For land and house owners did not hastily throw their properties upon the market; they followed expert and experienced advice and sat tight—indeed, they are still sitting. So there has been no depreciation of values made visible, no beginnings of a downhill rush to ruin, no serious depreciation of rents; in short, land business is sound, though stagnant. Freehold land has been strongly held through this troublous time, and doubtless will be till the peace comes. Then the wisdom of waiting will be made manifest. Agricultural land assuredly will be found to have risen in value, while it seemed to be merely lying idle. But for building land its development depends on financial factors which cannot yet be estimated, though it is pretty certain that the rates of interest upon all future mortgages will be raised to a higher level.

We are glad to learn that the interest shown in Mr. Banister Fletcher's lectures on architecture, in spite of unprecedented

war conditions, has justified arrangements to continue the courses this term. The course at the British Museum began yesterday, Jan. 7, at 4.30, and was on Roman Architecture. At the Victoria and Albert Museum the course begins on Monday, January 11, at 4.30, with nine lectures on English Gothic; while there are special lectures on Westminster Abbey, our national Valhalla, and on the Tower of London, which has been by turns fortress, palace, law courts, prison, and arsenal, and has always kept abreast of the needs of the times. Cathedrals, town- and trade-halls of Belgium, the martyr country of to-day, will also be described. Full particulars may be had from the Hon. Sec., 10, Woburn-square, W.C.

Messrs. Ashwell and Nesbit, Ltd., of Leicester, the well-known specialists in warming and ventilation, send us a well-designed and useful wall-calendar for the New Year, the date-cards bearing appropriate Shakespearian mottoes for each day. There is also an illustration of the Usher Hall, Edinburgh, which is heated and ventilated on Messrs. Ashwell and Nesbit's system. Their activities cover a wide range. Pioneers of centralised systems of heating, they have won world-wide reputation as laundry engineers, and for their "Eradica" system of water purification. The back of the calendar bears an informing chart, showing the excellent results of their Nuto-matic system of temperature control at Glasgow University. The results achieved are well worth the attention of all readers. During the twenty-four hours recorded, while the outside temperature ranged from 49 degrees to 36 degrees Fahr., that of the room did not vary two degrees each side of 60deg. Fahr., and the saving of coal was 67 per cent. A solid fact like this is worth many volumes of speculative dissertations on theories of warming and ventilation.

The fourth edition of the late Mr. W. F. Stanley's "Treatise on Surveying and Levelling Instruments" is issued. It has been revised and brought thoroughly up to date. It is the only work of its kind in existence, and describes all makes without distinction. Few, if any, men equalled its late author in regard to the theoretical and practical knowledge of his subject, and none was more fair-minded. Many a chat have we enjoyed with him in the past about one or other of his numerous inventions, and it was always refreshing to mark his frank appreciation of the efforts of others in similar fields. In that covered by this book he admittedly had no equal, and his enterprise as distinctly characterises the firm of W. F. Stanley and Co., Ltd., 286, High Holborn, W.C., from whom the book can be had. We commend it to every architect and surveyor.

"And how does this house suit you?" anxiously inquired the agent, after showing it to the prospective tenant.

"It would be all right," the gentleman answered, "if it had only five rooms instead of six."

"Why, what do you mean?" inquired the puzzled agent. "This cottage has but five rooms—parlour, dining-room, kitchen, and two bedrooms!"

"I know," the gentleman replied; "but you have overlooked the big room for improvement."

Our Illustrations.

ROYAL ACADEMY TRAVELLING STUDENTSHIP PRIZE DESIGN FOR A PICTURE GALLERY IN A PUBLIC PARK.

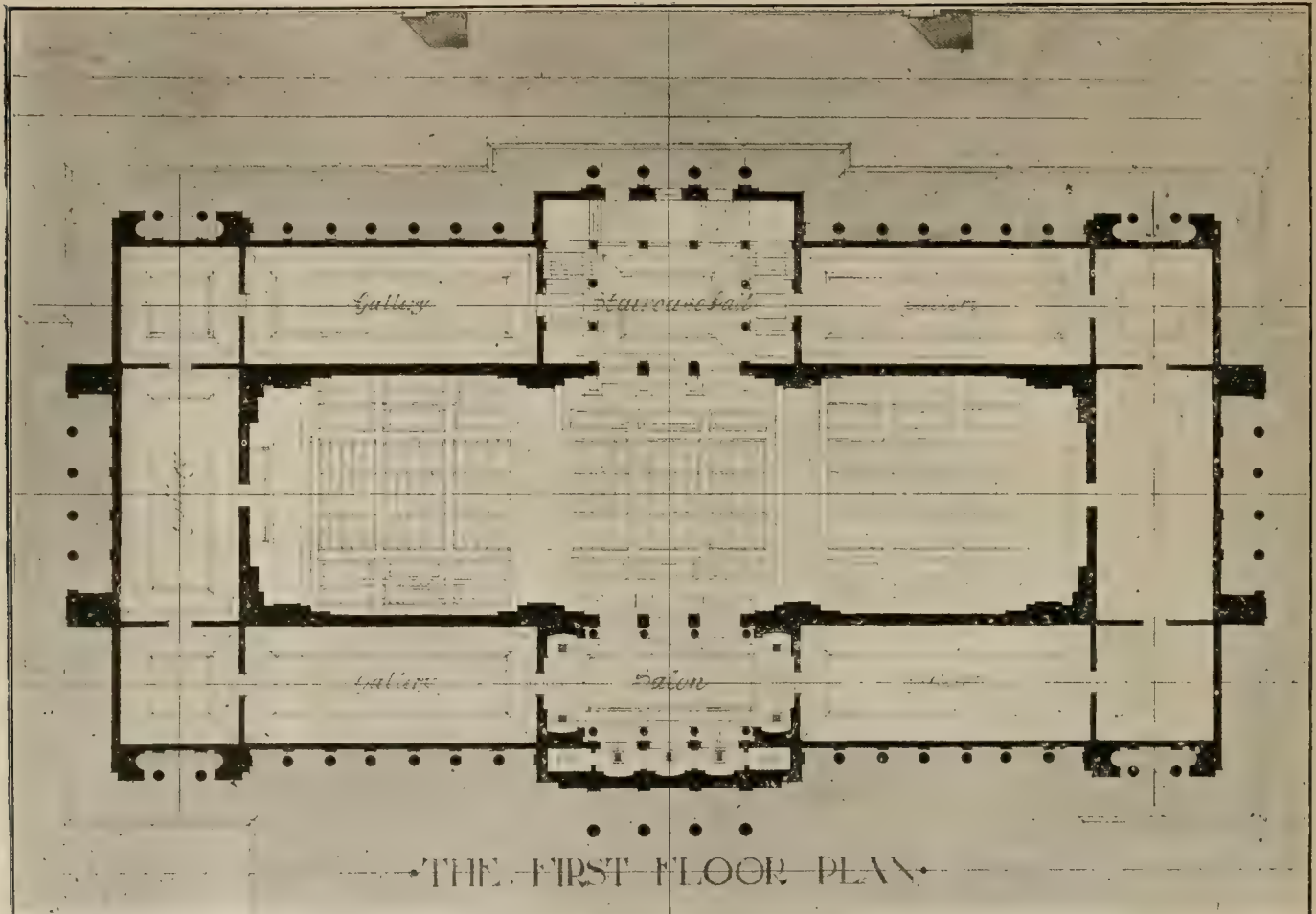
The conditions provided that in this competition the building should be faced with stone, and to stand unobstructed in a public park on a sloping site. The main entrance to face south and to have a broad terrace and steps beyond. The building to be 280ft. long and 130ft. wide, exclusive of architectural projections. To have on the ground floor a top-lighted sculpture gallery, surrounded with side-lighted galleries 30ft.

as a decorative motive would be a legitimate treatment, and would enhance the monumental character of the building. The scale of the central portico is slightly larger than that of the remainder of the composition, in order to render this feature a distinct point of concentration in the façade. The open courts at each end of the plan are intended to form a secluded retreat, in which persons may sit and read, or contemplate suitable statuary, etc., which would be placed within these courts. Aesthetically they form a subsidiary mass leading to the secondary mass of the main galleries, and thence to the dominating note formed by the upper part of the sculpture gallery. An attempt has been made to design the surrounding details—fountains, statuary, etc.—in proper re-

The ceiling is of fibrous plaster, and the carving over the mantel is in limetree, slightly toned. The mantel itself was made of Imperial Pavonazza. The room was designed by Mr. Sydney S. Brown, whose drawing, reproduced herewith, was exhibited at the Royal Academy last season. The work was entirely executed by Messrs. G. E. and F. Brown, Ltd., and fixed by them in South America.

STATUES, MEMORIALS, &c.

THE KING EDWARD MEMORIAL AT HOLYROOD.—Models are being set up near Holyrood to test the effect which will be produced at the Palace by the erection of the national memorial statue of King Edward VII. One part of that memorial will consist of



ROYAL ACADEMY TRAVELLING STUDENTSHIP PRIZE DESIGN FOR A PICTURE GALLERY IN A PUBLIC PARK, 1914.—By WILLIAM H. HAMLYN.

wide; entrance hall and grand staircase on the central axis. The first floor to consist of a series of top-lighted picture galleries over those below, and in the basement a side-lighted storage gallery. Mr. William H. Hamlyn, of Jenner House, Hunter-street, W.C., the winner of the Travelling Studentship, has sent us the following particulars of his design, showing how he worked out the conditions above quoted:—"The plan of the building is kept as simple and open as possible, so that an easy circulation of spectators is insured. One staircase only was required, and as this merely leads to a series of galleries on the first floor, and not to any important individual room, it was decided to place the staircase at the back of the building, in a separate hall. Internally, the galleries are kept perfectly plain, and an architectural treatment only adopted in those portions of the building which are not set apart for exhibition purposes. The grouping of the building externally is designed to give as simply as possible a true expression of the plan. The use of an Order in the elevation was very carefully considered, and adopted on the ground that an Order used frankly

in relationship to the main building, so that every point in the scheme would tend to lead up to the main mass. The large sculpture group in the open space facing the terrace forms a central point of interest. The hemicycles at the terminations of the steps leading up to the terrace are in sympathetic relationship with, and form an echo of, the semicircular terminations to the open courts at each end of the building. The building is so placed that it would close the vista down a broad avenue, the termination and direction of which is indicated upon the plan." We give the perspective view and plans, and shall give other illustrations in another issue. Mr. W. H. Hamlyn won the R.A. Bronze Medal and £10 premium for architectural design in 1912, and the British Institution Scholarship in Architecture, value £100, in 1913.

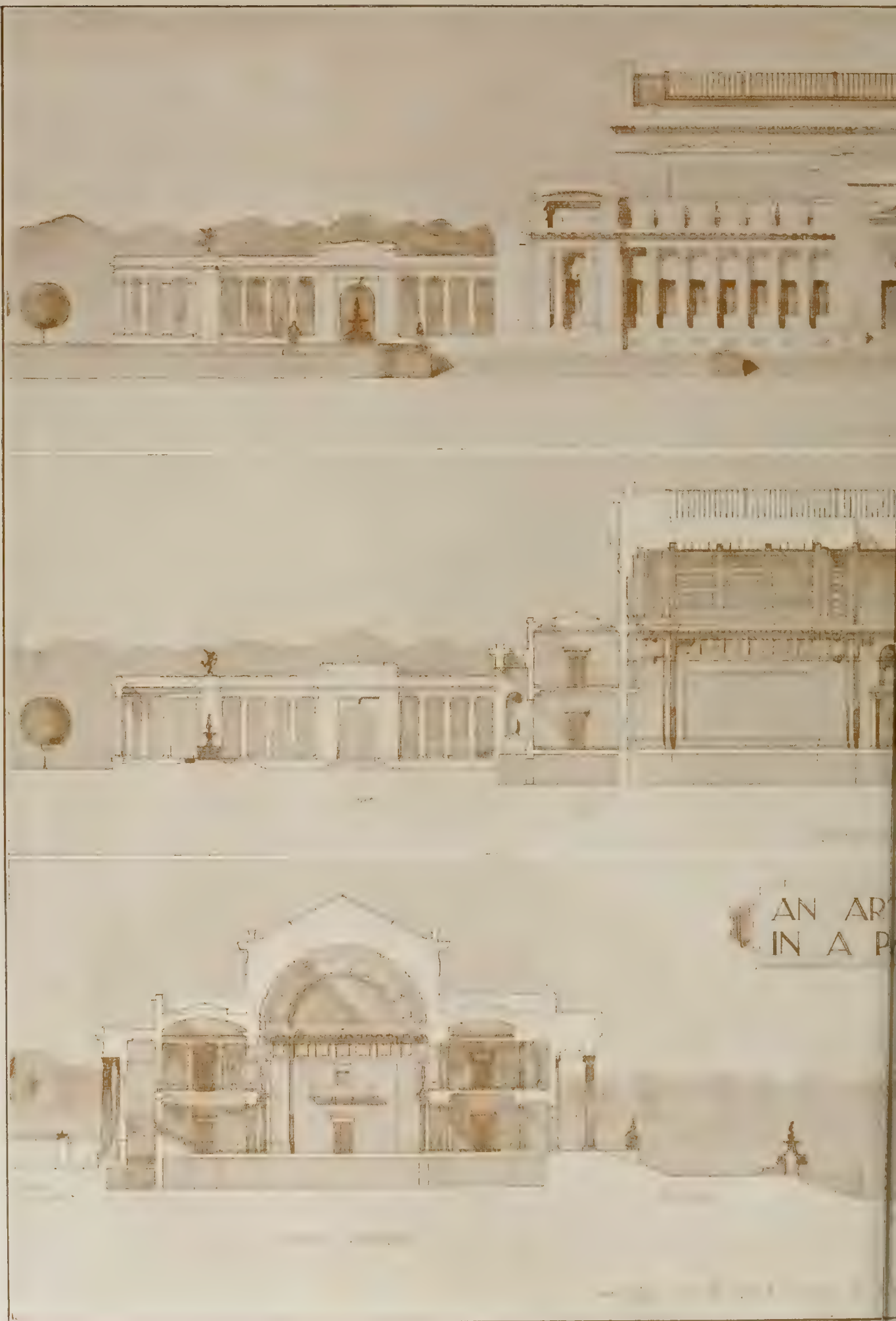
DINING-ROOM FOR A COUNTRY HOUSE NEAR BUENOS AIRES.

This room was designed to be carried out in oak and gold, but the work was eventually executed in mahogany and painted green, the enrichments being finished in toned gold.

wrought-iron gates to enclose the forecourt on its north and south sides. A statue of the late King is to be erected on a site at the foot of the Canongate, looking across to the older half of the Palace. From plans by Mr. Washington Browne, R.S.A., of Edinburgh, the architect of the memorial. Mr. Colin M'Andrew, builder, has prepared on this site, in wood and grey canvas, a representation of the manner in which it is proposed the site should be treated for the reception of the statue. The plot of ground affected is 90ft. by 35ft. The latter represents the breadth of the platform, approached by a series of steps, on which the statue will be placed. For background, immediately behind the statue is a semicircular wall, 17ft. 6in. in height, with moulded top. The walls on each side are 12ft. in height. The ends of the platform are recessed by a low wall surmounted by railings, with pillars at the opening and angles. The opening between the pillars on the front of the platform is 60ft. When all is in order, the Principal Architect of the Board of Works, London, will come to Edinburgh and report on the subject to their Majesties.

Mr. Harold Piper, the sanitary inspector, has been appointed surveyor to the Amblecote Urban District Council.





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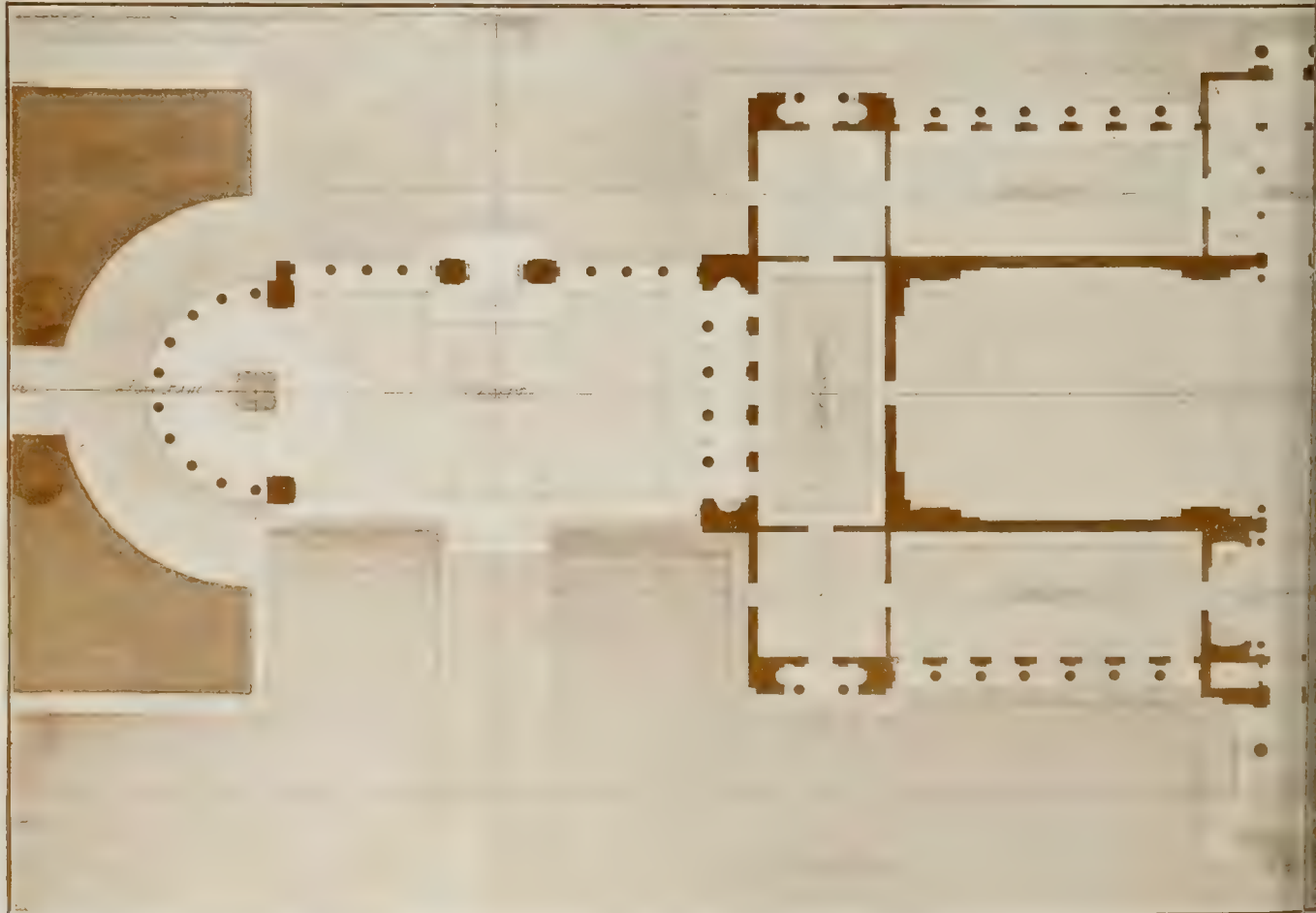
ROYAL ACADEMY TRAVELLING STUDENTSHIP: PRIZE ES

By Mr. WILLIAM H. HAMLYN (Winner of the Bris



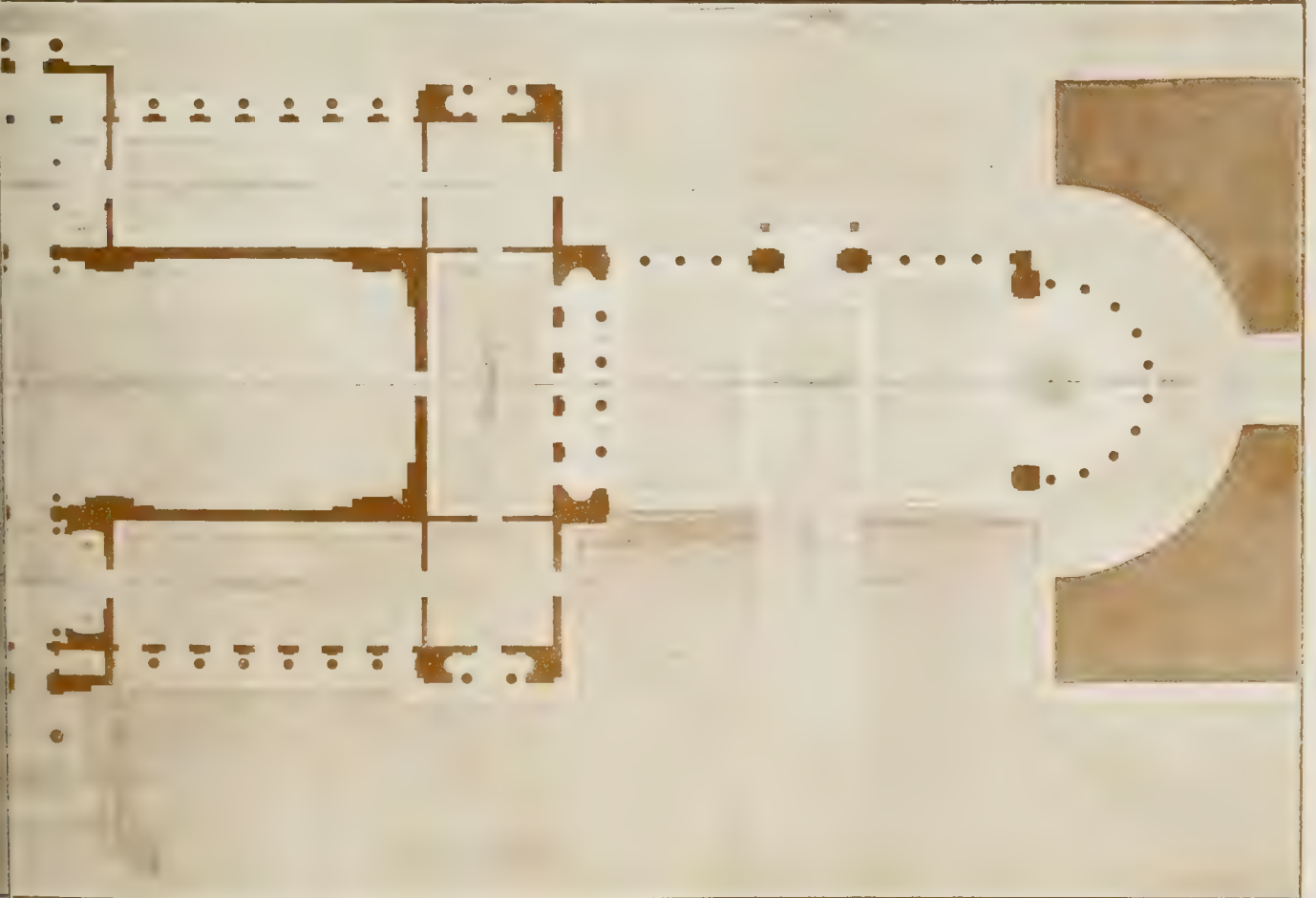
GALLERY
PUBLIC PARK





ROYAL ACADEMY TRAVELLING STUDENTSHIP: PRIZE DESIGN

By Mr. WILLIAM H. HAMLYN (Winner of the British



ON FOR A PICTURE GALLERY IN A PUBLIC PARK. 1913.

stitution Scholarship in Architecture of £100, 1913).

11210



THE BUILDING NEWS, JANUARY 8, 1915





DINING ROOM FOR A COUNTRY HOUSE NEAR BUENOS AIRES.—Designed by Mr. SYDNEY S. BROWN.

Correspondence.

RE RECRUITING FOR THE ARMY.

To the Editor of the BUILDING NEWS.

SIR.—I should be glad if you would allow me space in your paper to bring to the notice of your readers the purpose and aims of the Architects' War Service Bureau.

Since the war started we have successfully worked as a recruiting agency, more especially for the Royal Engineers, the 2nd London Sanitary Company, and the "Artists." We are now in a position to advise men about all branches of the Service, and to help them to enlist where they would be most useful.

Skilled men of all kinds are urgently needed, in addition to ordinary recruits, and I shall be glad to advise all applicants, if they will communicate with me or call at 18, Tufon-street, S.W.—I am, etc.,

ALAN POTTER,

Hon. Recruiting Officer.

Headquarters, 18, Tufon-street, Westminster, S.W.

"UNHEALTHY SCHOOLS."

SIR.—Your correspondent, Mr. D. Wynne Thomas, seems to think that when I referred to "fresh-air-at-any-price fanatics," I intended this to apply to architects. There is nothing that I can find in my remarks that should have led him to in any way infer this. On the contrary, from my connection with the architectural profession I have good personal reasons for not endangering the reputation of that profession for common-sense, and—may I add?—common humanity, by suggesting that, as a body, it could ever approve of a method of ventilation which consists solely of cross-currents and through-draughts of cold air.

Architects, as you very truly say, are too well acquainted with the drawbacks of such a plan to ever willingly employ it in schools, nor, for the matter of that, in any other occupied building. It is only helpless little children that could with impunity be subjected to such an atrocious system, which, if applied to churches, halls, theatres, or other such buildings, would be received with a storm of protest.

It is a plain duty to protest against a method of ventilation being employed in schools which consists entirely of "draughts, all draughts, and nothing but draughts," as such a plan, especially in winter, is nothing short of murderous, and a veritable "massacre of the innocents."

You say, "fresh-air-at-any-price enthusiasts" have a good deal to answer for; the toll exacted in the form of illness and discomfort arising from draughts being a heavy one," and that "in their contention that cold air 'hardens' one, and is, therefore, beneficial, they make the fundamental mistake of confounding the bracing cold air of outdoors with cold draughts indoors—two very opposite things, having results as wide apart as the Poles."

Apropos of this, a lecture was recently delivered at Portsmouth by Professor W. J. Simpson on the "Ventilation of Battleships and Submarines," in which he says: "Air forced in was apt to become a draught. The openings were very often over the men's hammocks, and, naturally, the draught of cold air caused the men to shut the ventilators. It was, therefore, a kind of 'Hobson's Choice'—either be suffocated by bad air, or suffer from ailments derived from draughts. *Draughts were not ventilation.* [The italics are mine.] A person in the open air got the air on all sides of him, when in a draught it pitched on one spot." There is nothing truer than that "Of all the ills that flesh is heir to, a through-draught is the deadliest."

If hardy, robust sailors suffer so much from the baneful effects of draught that they simply won't stand it at any price, what must the sufferings of delicate little children be in schools which are full of draughts from cross-currents from open windows, and which

to them must be veritable chambers of torture?

Mr. Thomas appears to think that the particular angle of the open window is the all-important point, though why is not explained. It seems to me that if cold air blows through a window into a heated room it cannot but descend, irrespective of angle, owing to its heavier specific gravity, and in so descending must inevitably cool, press down, and displace, after rebreathal, the ascending warm, vitiated air. The cold-air douche also cannot fail to strike the children sitting in the warmed air below with disastrous consequences to their health and comfort, as everyone knows who has experienced this disagreeable infliction—as who, indeed, has not!

The Board of Education certainly should move in the matter, until this "crying evil," as you so aptly describe it, is remedied. If the Board does not possess the necessary powers to enable it to act, the Society for the Prevention of Cruelty to Children might then be called upon to interfere, and parents should be protected who refuse to send their children into such death-traps.

In any case, subjecting young children in schools in the winter to this hideous mode of so-called ventilation by cross-currents and through-draughts of cold air from open windows should be stopped at once, even if a Royal Commission is required to do it.—I am, etc.,

ANTI-DRAUGHT.

London, December 2, 1914.

[We have several other letters to hand, some of which we will try to find room for if possible next week. Our Index takes much space this week.—Ed. "B. N."]

The corporation of Glasgow have approved the design of Mr. Kellock Brown for the statue, selected in competition, to be erected as a memorial to Thomas Carlyle.

Mr. Samuel Henry Dibble, of Ledsam-street and Ladywood-road, Birmingham, builder, died on September 30, aged 48 years, leaving an estate of the gross value of £203,046, with net personalty £54,569.

The partnership hitherto subsisting between W. N. Ware and H. H. Lawrence, surveyors and estate agents, at St. George's-road, Wimbledon, under the style of Messrs. Ware, has been dissolved.

At the offices of the London County Council a silver rose-bowl was presented to Mr. Andrew Young, chief valuer to the Council. He is retiring, under the age-limit regulation, on a pension, after twenty-five years' service.

Upper Holloway Baptist Chapel, in Holloway-road, N., was destroyed by fire on Saturday evening. The fire was due, it is believed, to the fusing of an electric wire. The church had only recently been redecorated throughout at a cost of over £2,500, and a new organ installed.

At the meeting on Monday of the Barrow-in-Furness Corporation, tenders amounting to £36,000 were accepted for the erection of new gasworks. It was also announced that the Carnegie Trustees had increased their gift of £12,000 to £13,000 for a new free library for the town.

At the next meeting of the Bethnal Green Borough Council the electricity committee will submit an estimate of £15,944 for the supply and laying of cables and execution of road-work in connection with the new electricity undertaking. The council does not intend to generate its own electricity, but will obtain the supply it requires from the Stepney Borough Council. In connection with the contract for cables and accessories, the electricity committee propose to stipulate that these shall be manufactured by British firms.

The London Association of Master Decorators estimate that 40 per cent. of the London operative painters are out of work, and that much distress exists among this class in consequence. Unless work is soon forthcoming the distress must grow rapidly, which those who control property can render valuable assistance in alleviating if they will forthwith give orders for such painting and decorating as may be required. By doing this they will not only render practical assistance in time of need, but will themselves directly benefit by the lower prices which most firms employing painters are willing to accept at this juncture in order to keep their men in employment.

Our Office Table.

Among the New Year's Honours may be noted the knighthoods conferred on Mr. Herbert S. Holt, of Montreal, well known as a Canadian railway engineer and contractor; on Mr. William Price, of Quebec, a lumber merchant, who took a leading part in the movement for converting the Plains of Abraham into a national park; on Mr. George Cunningham Buchanan, chief port engineer of Rangoon; and on Mr. John Herbert Marshall, who has been Director-General of Archaeology in India since 1902. The distinction of C.I.E. has been conferred on Mr. Edward Rawson Gardiner, India Public Works Department, chief engineer and secretary to the Government of Bihar and Orissa; on Mr. George Thomas Barlow, superintending engineer, Irrigation Branch, Public Works Department, United Provinces; on William Peter Sangster, Indian Public Works Department, executive engineer, Malakand Division, Upper Swat River Canal, North-West Frontier Province.

At the Tate Gallery there is being exhibited a large number of large cartoons, unfinished drawings, and paintings made by Alfred Stevens for the projected decoration of Dorchester House. In 1858 Mr. R. S. Holford commissioned Stevens to decorate Dorchester House. Two mantelpieces, a sideboard, doors, wall-mirrors, paintings, chairs, and curtains were included in the scheme. The dining-room ceiling and cove were to be painted with historical compositions. From 1858 to 1862, said the late Hugh Stannus, "Stevens spent about twelve months in studies and in painting a portion of the 'Judgment of Paris,' and then, being pressed by Government about the Wellington trial model, he laid the work aside, never to be resumed." The sideboard, doors, and mirrors, and the mantelpieces (with the exception of the supporting figures in the dining-room) alone were executed. Stevens died in 1875, two years after the mantelpieces were completed. Though the entire work was paid for in advance, Mr. Holford accepted the drawings and remaining portions of the dining-room mantelpiece and other work in full discharge. Some of the Dorchester House studies were dispersed at the sale of the artist's effects. The others have lain unremembered at Dorchester House until recently, when, following Mr. MacColl's investigations, they were unearthed in a muniment room.

Several important municipal schemes for the relief of the unemployed among the artisan and labouring classes were planned by the Manchester and Salford Corporations at the outbreak of the war; but all of them have been withdrawn for the present, owing to the scarcity of able-bodied labour. Among the principal proposals now temporarily in abeyance are the Manchester town-planning scheme for erecting 400 houses on twenty acres of land in Newton Heath, and the Salford scheme for 120 houses in Littleton-road, near the racecourse. With regard to the two most important schemes of all, the construction of a new road from Ladybarn to Cheadle and the acquisition of the Chorlton estate of Lord Egerton for the purposes of a municipal golf links, lake for boating, and a park, the Local Government Board have expressed an opinion that it is desirable not to proceed with these schemes for the present, as there are so few unemployed labourers.

Mr. William Bell, F.R.I.B.A., the architect of the North-Eastern Railway Company, retired from active service on December 31, after a connection with the company extending over fifty-seven years, during the last thirty-seven of which he has served as the company's chief architect. In this capacity Mr. Bell was responsible for the design and erection of the passenger stations, goods warehouses, hotels, etc. Mr. Bell was one of the first railway engineers or architects in this country to recognise the advantages of ferro-concrete construction, and several examples of this work, notably the

To encourage practical steps toward the elimination of smoke, inventors of fuel-saving devices and so-called smoke con-

Writing in "Indian Engineering" upon "Movements in Buildings," Mr. Stephen Wilkinson, L.R.I.B.A., of Dalhousie-square, Calcutta, says: "During the erection of the electric transforming station in Prinsep-street, Calcutta, for which I was the architect, and previous to the fixing of the roof and main joists, I noticed that one of the walls used to oscillate in a most alarming manner; the higher the wall was taken up the greater the movement. Only one wall in the structure was affected this way, and, moreover, the movement was intermittent; some days the wall would be motionless, and at other times its behaviour was remarkable. Ultimately I discovered the cause. Some thirty yards away, at the now dismantled power station, there was a large exhaust-pipe with a muffler on the top, discharging in the atmosphere, and the air-waves so formed were carried across to the face of the wall, causing the oscillation. When the pipe was not in use, of course, the movements ceased. The wall in question was about 85ft. long and 30ft. high. When the roof and cross-joist were fixed all oscillations ceased entirely, the impact of the waves not being sufficient to cause any movement with the extra load on the wall."

MEETINGS FOR THE ENSUING WEEK.

Glasgow Architectural Craftsmen's Society. "Iona," by P. Macgregor Chalmers, I.A. 8 p.m.

TUESDAY.—Institution of Civil Engineers. "The Lateral Pressure and Resistance of Clay," by A. Langtry Bell, B.A., B.E. 8 p.m.
Architectural Association of Ireland. "Pictorial Art and Architecture," by Arthur Hill, B.E., F.R.I.B.A. 15, South Frederick-lane, Dublin. 8 p.m.

WEDNESDAY.—Royal Academy. "Colour in Painting,"
by H. H. La Thangue, R.A. 4 p.m.
St. Paul's Ecclesiological Society.
"The Pilgrim's Way and the Pilgrim's
Progress," by H. P. K. Skipton.
Chapter-House, E.C. 8 p.m.

THURSDAY.—British Museum. "The Roman Forum,"
by Banister F. Fletcher, F.R.I.B.A.
4.30 p.m.
Society of Architects. Annual General
Meeting. 8 p.m.
Sheffield Society of Architects and
Surveyors. "Castle Howard," by A. B.
Burleigh.

Mrs. Francis Nugent, of Bloomfields, Castleconnell, Co. Limerick, who died on Sept. 17, bequeathed to the National Gallery, Ireland, her paintings by old masters; to the National Gallery of Science and Art, Dublin, her old china and antique figures and silver and cut-glass articles; and to the National Portrait Gallery of Ireland her portrait of General Vincent, an officer who fought in the American War of Independence.

The Lambeth coroner concluded on Wednesday the inquest on John Frederick William Cooper, of Walthamstow, aged twenty-one, builder's signalman, employed by Messrs. Holland, Hannen, and Cubitts, contractors, who was killed on Dec. 4 by the collapse of a derrick at the new County Hall, Belvedere-road, S.E. Arthur Wallace, crane-driver, of Robinson-street, Battersea, who fell 15ft. at the time of the accident, deposed that Cooper and he were having tea in their engine shed at the top of the derrick, when a sudden gust of wind twisted the staging round. Witness remembered no more. Other evidence having been given, the jury returned a verdict of "Accidental death," and recommended that such structures should be erected and maintained under Government supervision, with frequent inspections.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us. Timber quotations we omit altogether, as published figures differ so widely that they are, we fear, in many cases quite unreliable.

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£7 10 0 to	£8 0 0
Wrought-Iron Girder Plates	7 15 0 "	10 0 0
Steel Girder Plates	8 0 0 "	9 0 0
Bar Iron, good Stuffs	6 5 0 "	8 10 0
Do., Lowmoor, Flat, Round, or Square	22 0 0 "	0 0 0
Do., Welsh	5 15 0 "	5 17 0
Boiler Plates, Iron—		
South Stuffs	8 0 0 "	8 15 0
Best Sreeshill	9 0 0 "	9 10 0
Angles 10s., Tees 20s. per ton extra.		

Builders' Hoop Iron, for bonding, &c., £8 15s. to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—		
	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long. inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—										
3 to 7	8	9	10	11	12	13	14	15	B.W.G.	
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.	

	Per ton.	Per ton.
Cast-Iron Columns	\$6 17 6	\$8 10 0
Cast-Iron Stanchions	6 17 6	8 10 0
Roller-Iron Fencing Wire	8 5 0	8 10 0
Roller-Steel Fencing Wire	7 5 0	7 10 0
Galvanised	8 15 0	9 5 0
Cast-Iron Sash Weights	10 15 0	5 15 0
Cut Floor Beams	16 0 0	—
Corrugated Iron, 24 gauge	16 0 0	—
Galvanised Wire Strand, 7 ply.	14 5 0	—
14 B.W.G.	—	—

B.B. Drawn Telegraph Wire, Galvanised—					
0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—			
3in. diameter	£6 15 0	to	£7 2 6
4in. to 6in.	6 10 0	"	6 12 6
7in. to 24in. (all sizes)	6 17 6	"	7 2 6

[Coated with composition, 5s. 0d. per ton extra.
turned and bored joints 5s. per ton extra.]

Pig Iron—	Per ton.
Cold Blast, Lillieshall	80s. 0d. to 127s. 6d.
Hot Blast, ditto.....	87s. 0d. „ 97s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes.....	72½	p.c
Water-Tubes.....	66½	"
Steam-Tubes.....	65	"
Galvanised Gas-Tubes.....	60	"
Galvanised Water-Tubes.....	58½	"
Galvanised Steam-Tubes.....	50	"

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	*424 5 0 to	—
" Country	"25 5 0 "	—
Lead Barrel Pipe, Town	*25 5 0 "	—
" Country	"26 5 0 "	—
Lead Pipe, Tinned inside, Town	*26 5 0 "	—
" Country	"27 5 0 "	—
Lead Pipe, Tinned inside and outside	*28 15 0 "	—
" Country	"29 15 0 "	—
Composition Gas-Pipe, Town	*27 5 0 "	—
" Country	*28 5 0 "	—
Lead Soil-pipe (up to 4 in.) Town	*27 5 0 "	—
" Country	*28 5 0 "	—
[Over 4 in. £1 per ton extra.]		
Lead, Common Brands	17 17 6, ..	*£18 12 6
Lead Shot, in 28lb. bags	24 15 0 "	—
Copper Sheets, sheathing & rods	78 0 0 "	78 10 0
Copper, British Cake and Ingots	61 15 0 "	62 5 0
Tin, English Ingots	154 0 0 "	155 0 0
Do., Bars	155 0 0 "	156 0 0
Pig Lead, in lwt. Pigs (Town)	19 2 6, ..	19 10 0
Sheet Lead, Town	*23 15 0 "	—
" Country	*24 15 0 "	—
Genuine White Lead	29 15 0 "	—
Refined Red Lead	29 0 0 "	—
Sheet Zinc	55 0 0 "	—
Old Lead, against account	18 5 0 "	—
Tin	8 15 0 "	—
Cut nails (per cwt. basis, ordinary brand)	0 12 9 "	—

* For 5 cwt. lots and upwards.

PLATES.

		in.	in.	£	s.	d.	per 1,000 of
Blue Portmadoc	...	20	× 10	...	12	12	6 1,200 at r. stm.
20	20	16	8	...	6	12	6
Blue Bangor	.....	20	10	...	13	2	6
20	20	12	8	...	13	7	6
First quality	.....	20	10	...	13	0	0
20	20	12	8	...	13	15	0
20	20	16	8	...	7	5	0
Eureka unfading	.....	20	10	...	15	17	6
green	.....	20	10	...	15	17	6
20	20	18	10	...	18	7	6
20	20	13	10	...	13	5	0
20	20	16	8	...	10	5	0
Permanent Green	...	20	10	...	11	12	6
20	20	18	10	...	9	12	6
20	20	16	8	...	6	12	6

FULHAM, S.W.—For installing electric light in connection with the remodelling of the Star-lane school, Fulham, for the London County Council:—
 Dakin, H. and Co., Ltd., Putney £760 18 0
 France, A. C., and Sons, Ham-mersmith 487 18 0
 Johnson, O'Sullivan, and Co., Finchley 385 18 0
 Weston, G., and Sons, Fen-church-street 363 0 0
 Newman, A., Ilford 350 18 0
 Harrison and Co., Cricklewood 340 18 0
 Foote and Milne, Ltd., Victoria-street 334 8 0
 Kent and Co., Newcastle-on-Tyne 326 13 6
 Pearson, R. H. and J., Ltd., Notting Hill Gate 322 3 0
 Hawkins, A., and Sons, London-road 290 0 0
 Tyler Apparatus Co., Ltd., Gerard-street 294 8 0
 Defries and Goldman, Ltd., New Oxford-street 285 0 0
 (Chief engineer's estimate, £380.)
 * Recommended for acceptance.

GLASGOW.—For extension of Knightswood Hospital, for the health committee. Tenders recommended for acceptance:—

Anderson, W., Brickwork:—	£10,368 18 0
Henderson, M., Ltd., Joiners:—	8,522 3 1
Arnot, J. L., Plumber:—	3,410 1 3
Wemyss and Livingstone, Plasterers:—	1,575 19 3
Bertram, M., Slaters:—	974 4 9
Lindsay, J., and Son, Painters:—	895 11 5

GRAYS.—For the provision and laying of about 639ft. of 9in. and 6in. diameter stoneware pipe sewers, for the Orsett Rural District Council. Mr. C. F. W. Marsh, surveyor:—
 Horsman and Son, Grays £141 16 6
 Horsman, W., Forest Gate, E.* 118 0 0
 Wakeling, W., Little Thurock 117 7 9
 * Accepted.

GREENWICH, S.E.—For supply of ash conveyor at the generating station, for the London County Council:—

New Conveyor Co., Ltd., Smeth-wick	£1,567 2 6
Spencer & Co., Ltd., Melksbam	1,487 0 0
Babcock and Wilcox, Ltd., Renfrew	1,303 13 4

* Recommended for acceptance.

HAMMERSMITH, W.—For rebuilding No. 148, King-street, Hammersmith, for Mr. W. Millwood. Messrs. G. Saunders and Son, 230A, King-street, Hammer-smith, W., architects:—
 Lowe, W. £1,150 0 0
 Adamson, T. H., and Sons 1,075 0 0
 Battley, Sons, and Holness 1,039 0 0
 Johnson, C. 1,025 0 0
 Brown, W., and Sons (Builders), Ltd. 944 0 0

HOLMFIRTH.—For the construction of a reservoir at Greave, Hade Edge, to hold 3,000,000 gallons, together with break tank, iron pipes, sluice valves, &c.; providing and laying about 24 miles of 6in. and 5in. cast-iron mains. Messrs. Joshua Barrowclough and Son, Cross-roads, Holmfirth, engineers:—

Contract No. 1.—Constructing reservoir.	
Shardlow, J. J., Leicester	£5,500 0 0
Graham, A., and Sons, Hudders-field	5,450 0 0
Graham, A., Huddersfield	5,340 0 0
Firth and Co., Derby	5,092 12 0
Hyslop, A. and J., Manchester	4,474 1 5
Turner, R.	4,192 3 10
Birch, W., and Sons, York	4,127 2 9
Brigg, W., Bradford	3,950 0 0
Bushby C., and Sons, Leeds	3,915 5 8
Wimpenny J., and Co., Hudders-field	3,937 9 9
Waring, W., and Sons, Hadlers-field	3,667 0 0
Boothroyd, J. W., Huddersfield	3,628 2 0
Cooke, J., Huddersfield	3,475 10 0
Wagstaff and Turner (accepted)	3,325 0 0
Duncan, E. and G., Melton	
Mowbray	2,257 4 10

(Engineer's estimate, £3,256 10s.)

Contract No. 2.—Mains, &c.

Bushby, C., and Sons	2,316 11 0
Hyslop, A. and J.	2,145 15 11
Kenyon, J.	2,100 0 0
Wimpenny, J., and Co.	2,045 3 0
Brigg, W.	1,995 0 0
Sykes, S. and S., Golcar	1,907 0 0
Waring, W., and Sons	1,898 0 0
Graham, A.	1,838 3 8
Duncan E. and G.	1,830 1 4
Wagstaff and Turner	1,815 0 0
Gee, J., and Sons	1,802 3 7
Gill, H.	1,799 16 0
Turner, R.	1,792 2 3
Boothroyd, J. W. (accepted)	1,766 4 0

(Engineer's estimate, £1,719 14s. 3d.)

Rest of Holmfirth.

HORNSEY.—For sewerage, levelling, paving, kerb-ing, and channelling the passage-way at the rear of St. James's-parade, Muswell-hill, for the Hornsey Town Council. Mr. E. J. Lovegrove, borough engineer:—

Hill, R. W., and Co., Upper Holloway	£898 11 2
Adams, T., Wood Green	370 18 10
Abrahams, J., Ltd., Upper Holloway	369 6 8
Farrow, H., Brixton	343 13 5
Griffiths, W., and Co., Bishops-gate, E.C. (accepted)	310 15 4

ILFORD.—For erection of a sanatorium for phthisis patients at the isolation hospital, Chadwell, Ilford, for the Ilford Urban District Council. Mr. H. Shaw, M.I.C.E., engineer and surveyor:—
 Sharpin, W. S., Bow (accepted) £1,095 0 0

KEIGHLEY.—For supply of steam piping, for the electricity committee:—
 Babcock and Wilcox, Ltd. £132 0 0
 (Recommended for acceptance.)

KEYWORTH.—For the construction of new sewerage and sewage disposal works in Debdale-lane, Keyworth, for the Bingham Rural District Council. Mr. C. W. Kendrick, sanitary surveyor:—
 Tomlinson, E., Keyworth £300 0 0
 (Accepted.)

LONDON, N.W.—For the provision of an external iron staircase at the domestic centre, Camden-street, for the London County Council:—
 Davis, H. and Co., Ltd., Clapham £190 0 0
 Carron Co., Upper Thames-street 188 2 6
 Hayward Bros. & Eckstein, Ltd., Borough 186 17 6
 Cadogan Ironworks, Chelsea 186 0 0
 Mills, G., and Co., Ltd., Radcliffe 177 0 0
 Wilmer and Sons, St. Mary Axe 167 0 0
 Hawkins and Baxter, Upper Thames-street 159 0 0
 Norris, F. W., and Co., St. Andrew's Hill 156 0 0
 (Architect's estimate, £180)
 * Recommended for acceptance.

LOUGHBOROUGH.—For providing and laying in various streets about 1,400 superficial yards of 2in. concrete flagging, together with about 370 lineal yards of 10in. by 6in. spayed granite kerbing, for the town council. Mr. A. H. Walker, A.M.I.C.E., borough surveyor:—

Moss, W., and Sons, Ltd., Loughborough	£540 0 0
Bowler, T., and Sons, Lough-borough	535 0 0
Wileman and Gange, Lough-borough	493 10 0
Rall, J. T., Barrow-on-Soar	498 2 6
Palmer, A. E., Glenfield, near Leicester (accepted)	470 0 0

MALDON.—For the building works in connection with the Tollesbury water supply, for the Maldon Rural District Council:—
 Hutton, F., and Son, Birch £474 0 0
 (Accepted in place of J. Rayner, withdrawn.)

NOTTINGHAM.—For the erection of central build-ings, Upper Parliament-street, Nottingham, for the Nottingham Co-operative Society, Ltd. Mr. W. V. Betts, L.R.I.B.A., architect. Quantities by the architect:—

Hopewell, G. & Son, Old Basford	£15,686 0 0
Woodsend, W.	15,332 0 0
Wright, J.	15,148 0 0
Fish and Sons	14,824 0 0
Bow, T.	14,190 0 0
Dennett and Irgle	14,120 0 0
Long, T., and Sons	14,077 13 0
Barlow, T., and Co.	13,685 0 0
Crane, W., Ltd.	13,554 0 0
Manle, W., and Co.	13,550 0 0
Gilbert and Hall	13,440 10 0
Evans, F., Bulwell (accepted)	13 436 8 7

(Architect's estimate, £13,800.)

(Rest of Nottingham.)

STAFFORD.—For the erection of children's homes on the Stafford-road, for the Stafford board of guardians:—
 Clay, H. J., Sandon-rd, Stafford £2,508 0 0
 (Accepted.)

TILKINGTON.—For the erection of children's homes in Stone road, Tilkington, near Stafford, for the guardians. Mr. R. A. Glass, Stafford, architect:—

Dyke, G., and Son	£3,956 0 0
Sandy, G., and Co.	3,329 0 0
Mason, T., and Son, Heddesford	3,143 0 0
Sharp and Sons, Barton-under-Needwood	3,054 0 0
Jervis Bros.	3,056 0 0
Cooke, J., Porthill, Stoke-on-Trent	2,937 0 0
Eopley, F., and Sons	2,935 0 0
Gough, H., and Sons, Wolver-hampton	2,900 0 0
Morvan, J., and Son	2,640 0 0
Clay, H. J. (accepted)	2,508 0 0

(Rest of Stafford.)

TORONTO.—For the steel construction of the Don section of Bloor-street Viaduct (length 1,613ft., width 86ft.), for the city council. Mr. R. C. Harris, com-missioner of works:—
 Quinlan and Robertson, Montreal (accepted) 947,076.10l.

VANCOUVER, B.C.—For erecting a grain elevator in reinforced concrete and steel, and of 1,250,000 bushels capacity, at Vancouver, for the Canadian Govern-ment:—
 Barrett and McQueen, Fort William, Ont. (accepted) 690,000.10l.

WORKSOP.—For the erection of the proposed new ward and extensions at the administrative block at the Kilton Hall infirmary, for the guardians:—
 Greenwood, J., Mansfield £2,799 0 0
 (Accepted.)

YORK.—For the erection of 28 cottages on the Fulford Field House estate. Quantities by Mr. F. W. Spurr, Guildhall, York, city engineer:—
 Birch, W., and Sons, Ltd., 20, St. Saviourgate, York £47,374 6 4
 (Accepted.)

YORK.—For the construction of 418 lineal yards of new road, 50ft. in width, for the corporation. Mr. F. W. Spurr, Guildhall, York, engineer:—
 Warren, C. L., 78, St. Paul's-road, Seacombe, Wallasey, Cheshire

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* Drawings of selected competition designs, im-portant public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits, on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circum-stances.

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R. R.—Yes.

L. W.—Please send.

A. L. G.—Thanks; sorry, no room just now.

"BUILDING NEWS" DESIGNING CLUB.

DRAWINGS RECEIVED.—"Toumclier," "Why," "Pinto," "Empire," "Ogee," "September Morn," "Nemo," "Perigrinus," "Alpha," "Sen Wolf," "Romulus," "Raven," "Walbroke," "Penwith."

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Edingham House,

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OUR ILLUSTRATIONS.

Royal Academy Travelling Studentship Design for a Picture Gallery in a Public Park, 1914. By Mr. William H. Hamlyn (Winner of the British Institution Scholarship in Architecture of £100, 1913). Detail of Entrance Front.

THE SUPERVISION OF WORKS.

THE SUPERSTRUCTURE.

Once a building has risen above ground-level, the duty of the supervisor becomes less arduous. The brickwork of a ground story, for example, remains exposed to full view, whilst super-imposed stories are being constructed. In the case of trench bottoms, concrete and footings, our opportunities for inspection are limited, and soon the whole will be buried. But although extra time is thus apparently afforded for making up our minds, it will be seen that, in reality, equal promptness in decision is required. In fairness to contractors generally, if the architect has visited work and offered no criticism, either on the spot or immediately after his visit by a formal letter from his office, work to date may be reasonably assumed to have been approved. Promptness is as essential, therefore, as in below-ground supervision. Later on, unsound material and workmanship may be discovered, which should have received instant attention. On each inspection of works in progress, the architect should direct special attention to work done since his last visit, and should at once point out to the contractor or his foreman any defects.

All above the dampcourse may be considered as the superstructure, and we deal now, therefore, with constructional carcase, including walls, floors, and roofs; brickwork as left from the trowel, and floors and roofs by the carpenter. In the case of one-piece reinforced concrete constructions, and in skeleton-steel construction, the carcase will now generally include concrete and other fireproof floors. In the supervision of a bare superstructure, anything striking the eye as not absolutely plumb, and not perfectly horizontal in all parts, large and small, including brick coursing, anything "in winding," and all surfaces not true planes, should at once create suspicion and receive immediate and minute investigation. We may see in careless brickwork all that is opposed to these fundamental principles. The faces of walls "belly" in and out, or have no true plane for surface, the courses rise and fall in waves. Line and plummet, and all the laws of equilibrium have been set at naught, and good bricks (perchance) wasted.

If the architect has secured, by insistence, sound, square footing-courses and basement-wall construction—satisfactory work below ground—it is to be anticipated that good brickwork will be given him above, without further admonition. There is, unfortunately, a great amount of careless brickwork, and bricklayers who have worked much on inferior methods require

to be made to understand what solidly-constructed brickwork means. The outward sign of such is that true geometrical basis above referred to. Its elements are clean, sound, "square" bricks, and freshly-compounded mortar, or cement, of sound materials. If the architect has set his mind on a superior quality of solid and flushed work, with each horizontal and vertical joint really filled with mortar, he should lay special stress on this in his specification, and particularly impress it on the builder. The honest builder, as a rule, gives sound work, even if inclined to rough finish. It is the speculating fraternity who are votaries of the slapdash-and-dab style; so responsible for the general belief that, in exposed situations, driving rain, as a matter of course, goes through a 9in. wall as if it were brown-paper. These mortar-starved walls, with independent pointing, of course, make a sorry guarantee of structural stability. If the mortar is unsound or stale, or the bricks are laid dry and dusty, the cohesion throughout the whole mass is small. Some years back, a traction-engine shook down some shops on a Kentish highway. We examined the debris, and could not find two bricks adhering the one to the other!

It is likely that the young architect will have to listen to plausible arguments showing the equal, if not superior, efficiency of ordinary independent pointing, as against joints "struck as the work proceeds." A contractor desiring to rush off the brickwork always prefers subsequent pointing, for the neat, struck weather-joint is a great brake on indecent haste. A little consideration will show that there is no comparison between the methods of finish. Even supposing that in both cases the same solidity of flushed brickwork is maintained, the striking of the actual layers of mortar, condensing the edges, gives homogeneity throughout the course, with increased density to the weather face. Jointing as the work proceeds demands bricklaying true to line, whereas any amount of "faking" is required to botch up uneven coursed work.

We waste space, some may think, on work beneath criticism; but the principle of supervision is based upon identical considerations with those that demand a great force of policemen to deal with the possible and occasional rogue. We needs must guard. We must also trust. The writer could not swear that the interior parts of all thick brick walls that he has supervised are sound, solid brickwork. The inference is that such is the case; and, with experience, things hidden are understood from the things seen. Thus, a quick glance

at outward and visible show suffices, when one has acquired the peculiar faculty of judging work from its mere appearance. Obviously, however, we must all trust greatly in our human intercourse, and in building no less; while, as respects the clerk-of-works system, there was, no doubt, quite a leading light in his profession upon the public building we chanced to be upon when a batch of machine-mixed concrete, for reinforced work, was sent up with aggregate nearly as innocent of cement as a storm-washed Deal beach.

Of two buildings, to similar plans and specification, carried out by independent contractors, left with very lax supervision, that which shows the most solidly-constructed brickwork will generally have the best work throughout the majority of trades. Much the same may be said with regard to all other constructional work. In masonry, iron and steel construction, and roof and floor timbers, truth to line, vertical and horizontal, and coincident specific angle, is prima-facie evidence of good and correct material and its skilful and accurate putting together. Certainly, the run-up "cheap" roof shows every sign of offence "in winding," without waiting for the time when, the weak purlins having sprung, we have a miniature ocean swell on the superficies of slate, hogged over every truss.

The art of supervising building works resolves itself into that of insisting upon the due fulfilment of the clauses of the specification. The architect should foresee the problems likely to occur in carrying his designs into execution, and note the special points to which he expects special attention to be given, holding himself ever ready to make some necessary change in constructional detail, more especially in the case of alterations to old premises. The aim is, in all instances, a strong, enduring construction, plumb walls and columns, girders with proper and suitable bearing surfaces, accurately bolted with correctly-drilled bolt-holes, and all of weights and dimensions specified. Often the steelwork is in the hands of a specialist engineer; all the same, the final responsibility rests with the architect. The thorough supervision of reinforced-concrete construction presents a problem, under the circumstances assumed in these articles. Generally, such work is for large and important structures, so that a clerk of works will be employed. Even the speculative builder seems to have acquired a fancy for "reinforced"-concrete lintels, the "reinforcement" being, perhaps, a couple of half-inch gaspipes. Since the strength of re-

inforced concrete depends primarily on the scientific disposition of the reinforcement, the architect, acting without a clerk of works, must at least see that the steel is placed in accurate position, instructing the contractor that all must be prepared for his inspection. Otherwise his calculations will be set at nought, and he may employ the whole calculus in vain to correct them.

In making alterations and additions to existing buildings it is not humanly possible to foresee every contingency that may arise during the progress of works. Ready ingenuity to meet such unforeseen contingencies is, therefore, a requisite in skilled supervision. We do well here to make always for structural stability, as by thickening a wall, increasing the cross-section of joist or girder. The resultant "extra" is justified. It may be worth while pointing out to young architects about to carry out their first contract that, coincident with their duty to clients is the safeguarding of their future reputation. It is better far frankly to admit an oversight to one's client than to run risks, in the endeavour to keep down ultimate costs. The main end of supervising is to insure good value for money. On the theory that the strength of a chain is that of its weakest link, we may depreciate value of the whole building by quite small defects. It is, therefore, best, watching client's interests, to face blame for extra costs. The young architect naturally dreads increase of cost; but he may rest assured that the ultimate benefit of little improvements, only to be made, often, by seizing opportunities as the works proceed, will best serve his client. While weak handling, the fear of consequences, and neglect will, sooner or later, only redound to his own discredit.

REINFORCED-CONCRETE BUILDINGS.

MESSRS. TURNER'S ASBESTOS FACTORY,
TRAFFORD PARK, MANCHESTER.

Messrs. Butterworth and Duncan, Rochdale,
Architects.

The subject of this article is of a specially interesting character, being extensive in its proportions, and containing several unique features of construction. The magnitude of the scheme may be gathered from the small perspective sketch seen in Fig. 1.

The most important block in the scheme is seen in foreground of the perspective, and forms the subject of the detail illustrated in this issue, whilst the other details, including the power-house, tanks, heating-chamber, etc., are detailed in a further chapter. The building illustrated in this issue is a reinforced concrete frame building 112ft. 6in. long, 46ft. wide, and three stories high. It will be seen that it is carried on a series of thirty columns, disposed in the manner illustrated in the ground-floor plan (Fig. 2). These columns are arranged in three series of ten in each row, one row in each outer wall and one central row. The columns are bridged across with main and subsidiary beams, in the manner illustrated in the first- and second-floor plans (Figs. 3 and 4).

The details of these beams are given in Figs. 5 to 21. The detail elevation (Figs. 5 and 6) shows the beams employed at the first floor—in the positions marked on the plan—to support the external walls. F1 is the beam employed for the end spans, and F2 for the intermediate spans. These beams are 15in. deep and 9in. wide in both cases, and are constructed on the continuity principle, with tension-bars above the columns. Looped hangers are employed, as shown in the enlarged section (Fig. 10), and one of each pair of the positive tension rods is bent up to secure shear resistance, in the manner shown in the elevation.

The main floor beams marked F5 on first-floor plan are illustrated in Figs. 7 and 11. These beams are 26in. deep, 9in. wide, and have a total span of 23ft. between the

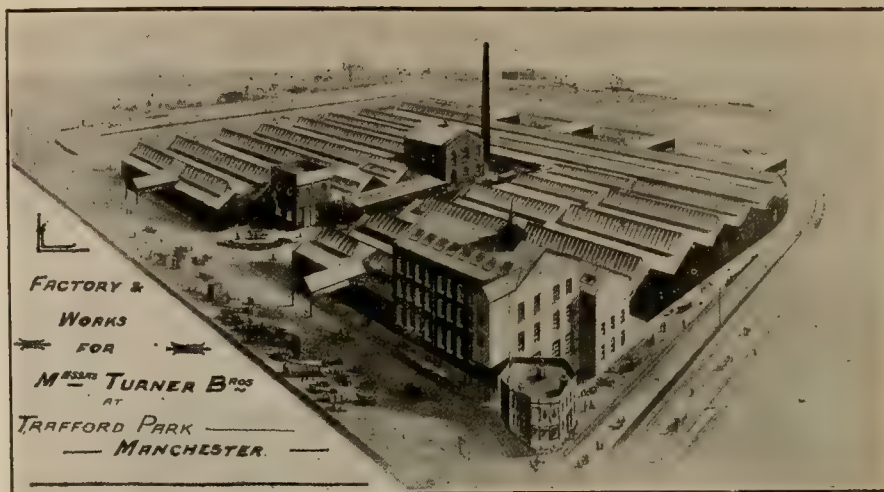
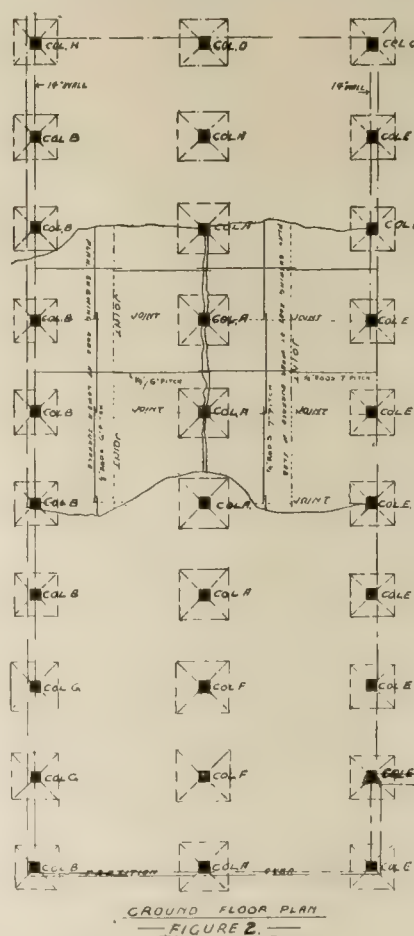


Fig. 1.

supports. They are heavily reinforced with twin rods, as shown in section (Fig. 11), and are well bracketed and tied across the angle connections to the columns; the smaller linking-rods, it will be seen in the elevation, are bent round and secured to the shear rods. These beams are also constructed on the continuous principle, with the tension-rods shown on the elevation. Fig. 14 illustrates beam F6, which, it will be seen from

variations, incident chiefly upon the introduction of the hoppers. The main beams (marked S5 and S6 upon the second-floor plan, Fig. 4) are similar in construction to F5 and F6 on the first floor, as also are the external and cross-beams, S9, S2, etc., marked upon the plans and details. The principal variation is in beams S21, S22, and S24. These are small, heavily-reinforced



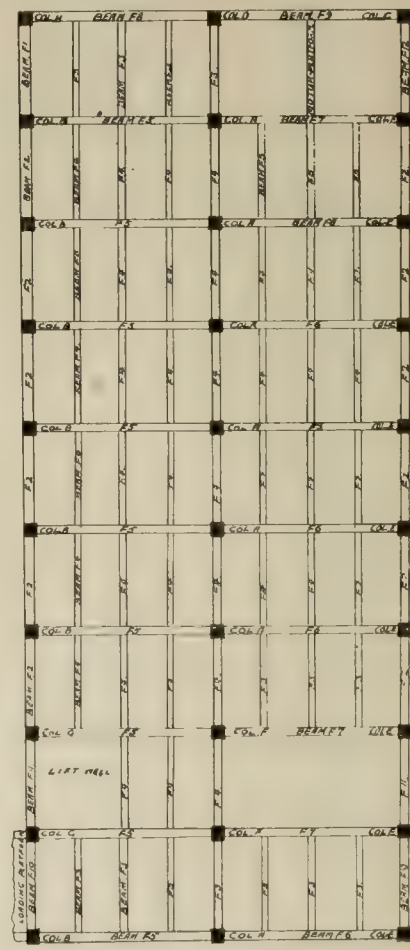
GROUND FLOOR PLAN
FIGURE 2.

the plan (Fig. 3) is a continuation of beam F5, and of similar construction.

The end beams, F11, are shown in elevation (Fig. 8); they are 15in. deep and 9in. wide, provided with plain reinforcement of two pairs of heavy rods, shown in the section of Fig. 12.

F12 is one of the beams provided for the motor platform, is of similar construction, and is illustrated in Fig. 9 (elevation) and Fig. 13 (section).

The upper floor beams follow the same general lines of construction, with certain



FIRST FLOOR PLAN
FIGURE 3.

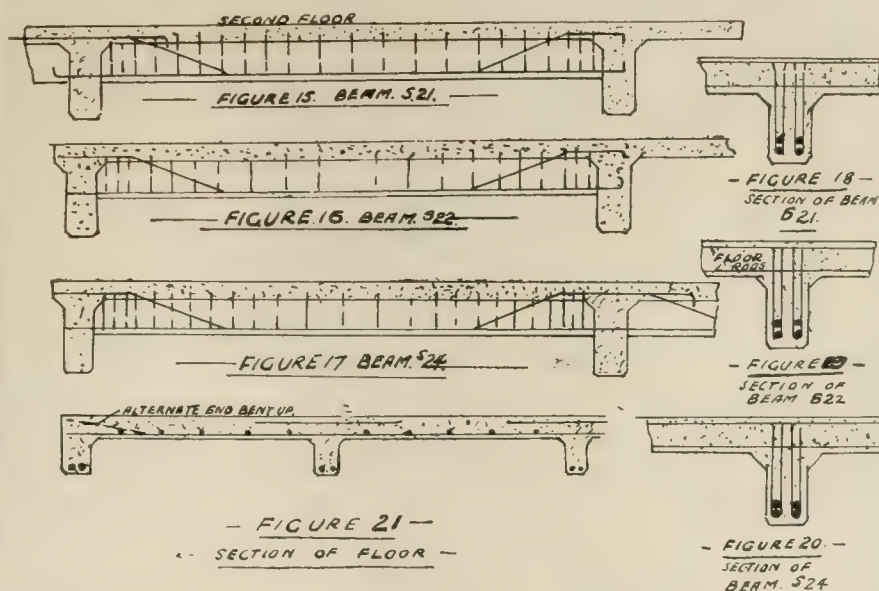
beams, shown in Figs. 15 to 20. Fig. 15, beam S21, is 10in. deep by 6in. wide, and has a span of 12ft. 6in. S22 and S24, it will be seen, are similar, and all these beams have very heavy tension resistance, consisting of four large rods closely linked and stirrups.

The floor section employed throughout this building is shown in Fig. 21. This figure shows the lattice of rods employed at 6in. intervals, and providing a high resistance in



the comparatively small section of 5in. total depth. It will be seen that advantage has also been taken here of the additional strength secured by constructing the floor on the continuous principle. It will also be noted that each alternate floor-rod is bent up to

columns diminish in diameter, and just above the ground floor, where the rods of the ground-floor shaft are connected to the rods built into the reinforced-concrete bases. The foundations are prepared with a layer of 8 to 1 concrete, and are constructed in a total

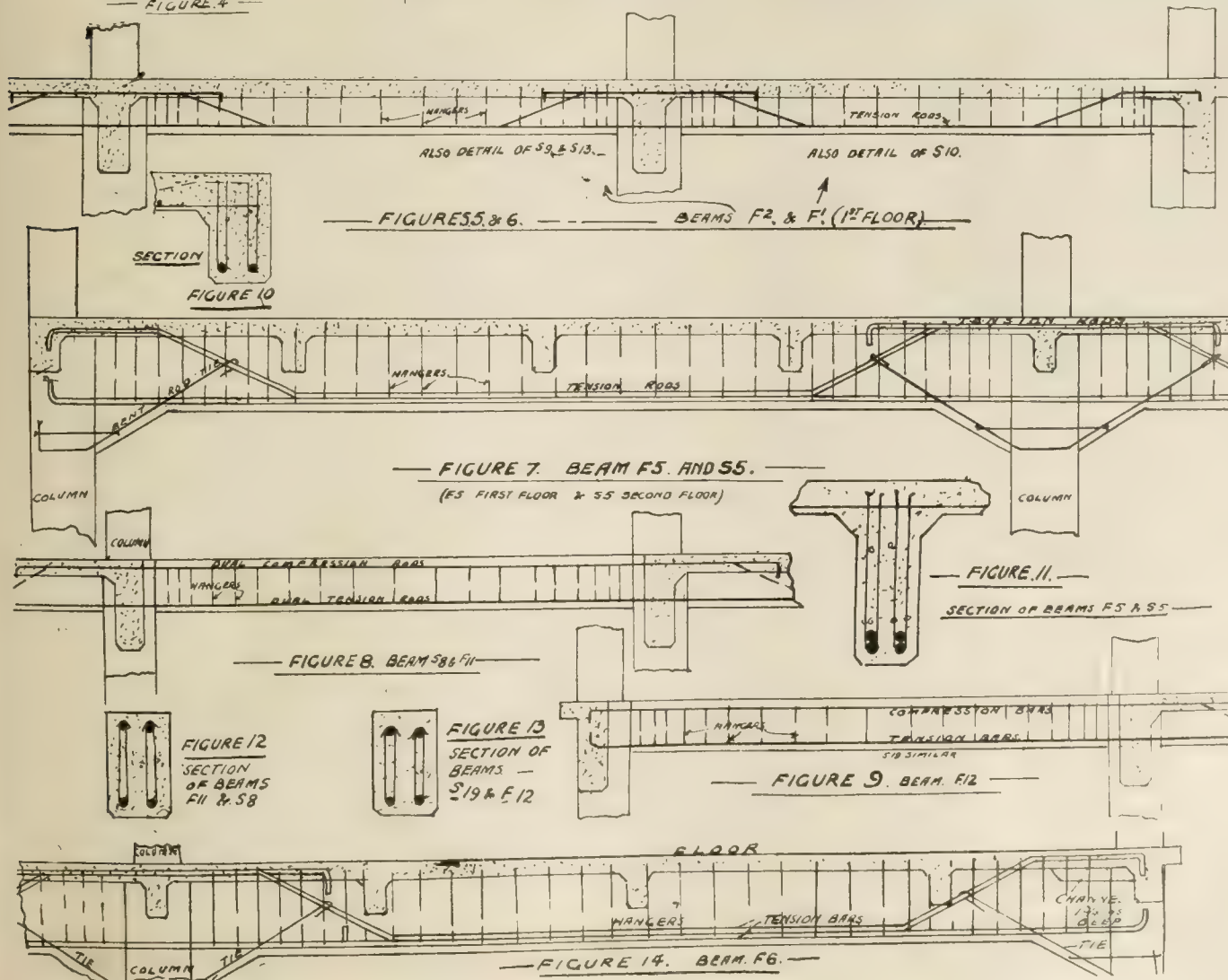


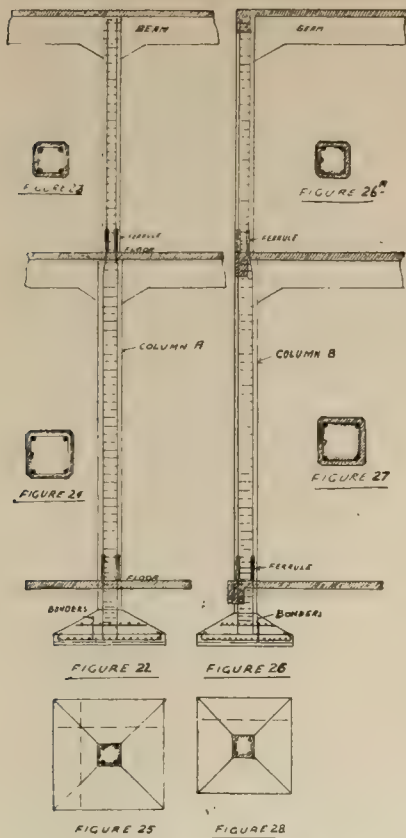
provide a tie. Fig. 21 also shows the section of the smaller cross-beams.

The columns employed for this building are of very substantial construction. They are designed in the form of a square throughout, with four stout rods arranged at angles, and linked up together with stout wire ties at 6in. intervals. The lengths of rods are connected together with 18in. ferrules just above the first floor, where the

depth of reinforced work about 1ft. 9in. high, with two tiers of latticed rods, of which the ends of the lower tier are bent up to form ties. Vertical binders are also inserted where shown on the drawings at 12in. intervals.

Figs. 22 to 25 are a typical illustration of the interior columns marked A on the ground-floor plan; Fig. 22 is an elevation; Fig. 23 a plan of the 13in. section between first and second floors; Fig. 24 is plan of the 18in.





A typical example of the exterior columns is illustrated in Figs. 26 to 28. Fig. 26 being the elevation, Fig. 26a plan of the upper section, Fig. 27 a plan of the lower section (ground to first floor), and Fig. 28 a plan of the 6ft. square base.

The longer shafts, marked by letters F and G on the plans of the building (Figs. 2, 3, and 4), are shown in detail in Figs. 29 to 37. These are, of course, of heavier construction than the shorter shafts, in order to provide for the greater loads. The interior shaft, F, is shown in elevation, Fig. 34, and plans 35, 36, and 37. The upper part of the shaft is 15in. square, with four large reinforced rods, and the lower section is 20in. square, with eight similar rods as reinforcement. The foundation is 7ft. 6in. square, of similar construction, and with the double reinforcement indicated in the previous examples.

The external column G is of somewhat smaller section, but similar construction. The foundation base is in this case 6ft. 6in. square. It will be noted that the cantilever balcony supports are attached to this column. The construction is shown on the elevation, Fig. 29. A single bent rod is used for both tension and compression reinforcement. It is bent round at the outer angle, carried back, and hooked into the floor beam behind. Fig. 30 is a plan of the upper portion of the shaft, and Fig. 31 is a plan of the lower. The foundation is shown in Fig. 32. Fig. 33 indicates a variation in the construction of the upper section of the shaft, in the case of one column. The whole of the concrete work has been executed and designed by Stuart's Granolithic Co., Ltd., of 45, Bedford-row, W.C.

(To be continued.)

THE R.I.B.A. EXAMINATIONS. PRELIMINARY.

The Preliminary Examination, qualifying for registration as a Probationer R.I.B.A., was held in London and the six provincial centres on November 24 and 25, 1914. Of the 70 candidates admitted, 25 were exempted from sitting, and the remaining 45 examined, of whom 24 passed. The passed and exempted candidates—numbering 49 altogether—are as follows:—

Georgi Eric Adams, Yorecroft, Ripon; Henry Augustus Davis Adams, "Invermeath," Holywell-avenue, Monkseaton; Harry James Ambler, 18, Devonshire-mews East, Portland-place, W.; Clarence Howard Bailey, 62, Coggleshall-road, Braintree; Harry Bannister, 65, Edith-grove, Fulham-road, S.W.; James Bennett, c/o Messrs. John Burnet and Son, 239, St. Vincent-street, Glasgow; Walter James Bennett, Rigmund, Buchanan-gardens, St. Andrews, Fife; Alfred Geoffrey Beville, 7, Downshire-hill, Hampstead; Allan P. Buchanan, 274, Renfrew-street, Glasgow; Stanley Godwin Bulstrode, "Vectis," Bishop's Waltham; William Frederick Cartwright, 20, Cambridge-street, Loughborough, Leicestershire; Gerald Austin Cassidy, 4, Clarendon-street, Preston; Fred William Chapman, "Fairfield," Tipton Crescent-road, Sheffield; Harold Goundry Clark, Summerhill, Abbey-road, Darlington; Albert Crawley, c/o Mr. H. H. Dunn, St. Peter's Churchyard, Lincoln; Charles C. Elliott, 18, Station-street East, Coventry; Archibald Victor Farrier, 222, Canbury Park-road, Kingston-on-Thames; Alex. Garden Forgie, 33, Summerside-place, Leith; Charles Stott Gamon, Rossmore, Neston; Leopold John Ellacott Genner, "Mayfield," Blenkarne-road, Wandsworth Common, S.W.; Percy James Gordon, 8, Mecklenburgh-street, W.C.; John Nigel Greasley, "Clovelly," Wentworth-avenue, W. Southbourne, Hants; Tom William Haird, 56, Wilberforce-road, Leicester; Andrew Blayne Hamilton, Bloomsbury Club, Cartwright-gardens, Tavistock-square, W.C.; Norman Asquith Howell, 14, Glebe-road, Reading; Frank Victor Hulme, 1, Clare-street, Harrogate; Stoke-on-Trent; Frederick Wm. Jones, Town Hall, Rochdale; Cecil Frederick Keller, Edgehill, Winchester; Martin Douglas Niel Koch, St. Saviour's Vicarage, Eton-road, Hampstead, N.W.; Jack Pritchard Lovell, 56, Molneux-street, Derby; Joseph Samuel Lowe, 127, Claremont-road, Moss Side, Manchester; Joseph Arthur Millard, 8, Wiltshire road, Brixton, S.W.; Cyril Hawthorn Mitchell, c/o Messrs. Bond and Bailey, 115, Gower-street, W.C.; Wallace George Mitchener, "The Haven," 28, Montpelier-rise, Woodstock-avenue, Golden Green, N.; John Price Nunn, 91, Camp

street, Lower Broughton, Manchester; Arthur Peel, Church-street, Staveley, Chesterfield; John Cliffe Pidduck, Grove House, Alsager, Cheshire; Eustace Archibald Rennant, 185, Croydon-road, Anerley; Kenneth Morris Roberts, 4, Vanbrugh Park-road, Blackheath, S.E.; William Jelf Rogers, 152, Stow-hill, Newport; George Arthur Smith, 23, Alexandra-road, Hull; Leslie Richard Stokes, Bridge House, Beaconsfield; Howard Davey Sugden, Sunnyside, Peel Moat-road, Heaton Moor, Stockport; Harry Tansley, 15, Stuart-street, Leicester; Frederick Leonard Thomas, Taunton School, Taunton; Lionel George Theophilus Thomas, Perse School House, Glebe-road, Cambridge; Richard Simons Trillia, 16, Richmond-terrace, Clifton, Bristol; Harold Watson, Newall Carr, Otley; Reginald Alex. Gibson Wilson, 259, Oxford-street, Swansea.

INTERMEDIATE.

The Intermediate Examination, qualifying for registration as Student R.I.B.A., was held in London and six provincial centres from November 20 to 27, 1914. Thirty-four candidates were examined, of whom 19 passed. The passed candidates are as follows, the names being given in order of merit as placed by the Board of Architectural Education:—

Albert Peregrine Lloyd, 5, The Promenade, Swansea; James Ambrose Dartnall, Forest House, High Stone, Leytonstone, N.E.; Henry Cartwright Helliwell, 74, Plymouth-grove, Manchester; Cuthbert Bertram Stewart, 29, Stanhope-road, Darlington; Leslie Fenner, 63, Laburnum-avenue, The Garden Village, Hull; Cyril Hawthorn Mitchell, c/o Messrs. Bond and Bailey, 115, Gower-street, W.C.; Kingsley Vale Weston, 19, Epperstone-road, West Bridgford, Nottingham; Douglas Edward Knight, 29, Millicent-road, West Bridgford, Notts; Gerald Rupert Clayton, 2, Oozehead-lane, Blackburn; Garnet Reginald Cottingham, 37, Vernham-road, Plumstead, Woolwich, S.E.; Henry Goronwy Evans, 5, North-parade, Carmarthen; George Wallace Proffitt, Memorial-road, Walkden, nr. Manchester; Evan Wendell Roberts, Railway Inn, Penclawdd, Swansea; Noel E. Scott, 6, Summerhill-terrace, Wellington-road, Cork, Ireland; William Needham Spence, "Lithgow," Oakley-road, Ranelagh, Dublin; Adam Knowles Stewart, Creeve, Loughgelly, Co. Armagh; Vernon James Streadwick, 47, Trent-road, Brixton-hill, S.W.; Robert Wilson, jun., Almalea, Falkirk; Arthur George Wood, The Parsonage Farm, Brenchley, Kent.

The number of failures among the relegated candidates in each subject of the Intermediate Examination was as follows:—

A. Principal Styles and General History of Architecture	7
B. 1. Simple Applied Construction	9
B. 2. Theoretical Construction	10
C. 1. Historical Architecture	3
(a) Greek and Roman	1
(b) Byzantine and Romanesque	—
(c) French and English Gothic	1
(d) Italian, French, and English Renaissance	—
C. 2. Mathematics and Mechanics	—
C. 3. Design	4

EXEMPTIONS FROM THE INTERMEDIATE.

The following Probationers, trained at the schools mentioned, and possessing the certificates required under the regulations, were exempted from sitting for the Intermediate Examination, and have been registered as Students R.I.B.A.:—

James Bennett, c/o Messrs. John Burnet and Son, 239, St. Vincent-street, Glasgow; James McLellan Brown, Green-street, Stonehouse, Lanarkshire; Edith Mary Wardlaw Burnet, 59, Queen's-road, Aberdeen; Douglas Charles Lawford Derry, 62, Redington-road, Hampstead, N.W.; Ronald Aver Duncan, 31, Glebe-place, Chelsea; Henry Nettleton Fisher, 84, Hungerford-road, Camden-road, N.; Percy James Gordon, 8, Mecklenburgh-street, W.C.; Andrew B. Hamilton, Bloomsbury Club, Cartwright-gardens, Tavistock-square, W.C.; Martin Douglas Niel Koch, St. Saviour's Vicarage, Eton-road, Hampstead, N.W.

In accordance with the special concession granted by the Council to Probationers on military service—viz., "Candidates for the Intermediate Examination whose Testimonies of Study are approved, to be registered as Students"—the following Probationers have been exempted from sitting for the Intermediate Examination, and have been registered as Students R.I.B.A.:—

James Hunter Aitken, Biddles Farm, Farnham Royal, Slough; George Alfred Allen, 34, Jaffray-road, Bromley, Kent; Edward Noel

section between the ground and the first floor; and Fig. 25 is a plan of the 7ft. square base.

Clifton, 7, East India-avenue, E.C.; Philip Henry Cundall, "E" Company, 4th Public Schools Battalion, Royal Fusiliers, Leatherhead; John Spedding Curwen, c/o Mr. J. F. Curwen, 24, Highgate, Kent; Harold Sidney Davis, "Amalhi," Tankerton road, Whitstable; Graham Tom Eveleigh, 7, Northfield, Bridgwater, Somerset; Kenneth John Fisher, 1, Comely Bank-road, Egremont, Cheshire; Harold Murton Jeffreys, 127, High-street, Maldon, Essex; Charles Frederick Jones, 9, Howard-gardens, Cardiff; Geoffrey Thomas Mullins, 18, West Heath-avenue, Hampstead, N.W.; Robert Wm. Pite, 13, Elm Grove-road, Ealing, W.; Alec Donald Rix, London House, Acle; Walter Rudman, "Laleham," Clarence-road, Clapham Park, S.W.; Alfred Snell, Church-street North, Liskeard; Robert George Vergetti, 7, Walter-road, Swansea, South Wales; Walter George Wilkinson, 23, Oppidans-road, Primrose Hill, Hampstead, N.W.

FINAL AND SPECIAL.

The Final and Special Examinations, qualifying for candidature as Associate R.I.B.A., were held in London from Dec. 3 to 11, 1914. Of the 42 candidates examined, 17 passed, and the remaining 25 were relegated. The successful candidates, given in alphabetical order, are as follows:—

Leslie Patrick Abercrombie, The University, Liverpool; Thomas Henry Barrow, 100, Shenley-road, Camberwell, S.E.; Habib Basta, 17, Endymion-terrace, Finsbury Park, N.; Naser-wanji Mancherji Bhowanagare, 1, Gordon-place, Gordon-square, W.C.; Edwin Forbes Bothwell, "Blackhall," 211, Romford-road, Forest Gate, Essex; David Arthur Carmichael, Netherdon, Greenock, N.B.; William Robert Davison, Longhirst Brooks, Morpeth; George Eric Francis, 115, Newlands Park, Sydenham, S.E.; Thomas George, 1, Okus-road, Swindon; Blakeley Rinder Gribbon, Windsor-terrace, Garforth, near Leeds; Trevellyn Phillip Jenkins, 276, Oxford-street, Swansea; Henry Norman Jepson, 13, Chatham-road, Kingston-on-Thames; Edward Meredith, Tylwyd, New-bridge-on-Wye; Albert Henry Owen, 71, Marlborough-road, Upper Holloway, N.; Stanley George Soper, 50, Woodville-road, Golder's Green, N.W.; Harris Stephens Triscott, 2, Iverson-road, Brondesbury, N.W.; Reginald Sharman Wilshire, 60, Trinity-road, Chelmsford.

The number of failures among the relegated candidates in each subject of the Final Examination was as follows:—

A. Design	20
B. Construction—	
(1) Foundation, Walls, Roofs, &c.	15
(2) Iron and Steel	11
C. Hygiene	11
D. Properties and Uses of Building Materials	3
E. The Ordinary Practice of Architecture	5
F. The Thesis	8

THE SOCIETY OF ARCHITECTS' ANNUAL REPORT.

The annual report of the Council of the Society of Architects, presented to the members last (Thursday) evening, states that a year ago the Council appointed nine standing committees to assist them in dealing with their work. Of these the Board of Professional Defence is an advisory committee, formed for dealing with cases in which members are personally concerned, involving matters beyond the scope of the Practice Committee, and embracing questions of principle affecting the profession generally. It is, perhaps, a matter for congratulation that the necessity for calling this committee together has not arisen during the past session. The Council also appointed local honorary secretaries in various countries and in our Dominions and Colonies, and also in Argentina and China.

Seventy-two candidates have been elected to membership by ballot, and five Graduates and fifteen Students have been admitted to the respective registers by the Council. After allowing for deaths, resignations, voids, lapses, and removals, the total membership on October 31 is 1,228, of which number 1,014 are corporate members.

At the examinations 21 candidates submitted themselves, of which a large proportion were relegated to their studies in almost every subject taken. A number of competitions were offered to Graduates and Students during the session. The adoption of the jury system of assessing the designs has demonstrated the fact that to secure

unanimity it is necessary that the jury should have previously agreed to the subject in all its bearings, drawn up the conditions, know exactly the object of the problem set, and the determining factors for its successful solution.

In November, 1913, the Council completed its revision of the Society's draft Registration Bill, and the document was settled in conference with Sir Alfred Cripps, K.C., M.P. (now Lord Parmoor). The Bill was then issued to the professional Press and made public generally, with a view of inviting observations and criticisms thereon. As a result of this publicity, a number of useful opinions and suggestions were received and noted for future consideration. A copy of the Bill was also sent to the councils of interested professional bodies. No objection was raised by them on the question of principle, but the Auctioneers' Institute sought to have that body scheduled in the Bill, and the Institution of Municipal Engineers thought their members were not sufficiently protected. The Council did not see its way to meet the wishes of the Auctioneers' Institute, and consider that the members of the Institution of Municipal Engineers were already sufficiently covered, though the Council was prepared to discuss the matter with the Institution. The Society's proposals attracted a good deal of attention among other professions, notably the dentists, whose organ, the "Dental Surgeon," pointed out that if certain sections of the Dentists Act (relating chiefly to restriction of the title of dentist to qualified persons, and recovery in a court of law of charges for professional services), had been drawn on the lines of similar clauses in the Society's Bill, the present position of affairs in the dentists' profession would never have come about. Some useful criticism was also received from the "South African Architect," based on experience of the working of the Transvaal Architects Act, which the Society was to a considerable extent instrumental in securing. The journal in question holds the view (on which some difference of opinion exists in the profession in South Africa), that a Registration Bill should confine itself entirely to Registration matters, and should not include any provision for educating the architect before registering him, the point being that architects should not be taxed to assist in further filling an already overcrowded profession. The Council, on the other hand, considers that one of the advantages of Statutory Registration would be that an Act such as that proposed by the Society would at once define a standard of architectural education, and that everyone desirous of taking up the profession in the future would know what was required of him before spending time and money in endeavouring to qualify. At a meeting held on January 5, 1914, the general body of the R.I.B.A. decided not to proceed with a Registration Bill, at any rate for the present, but to apply for an extension of their Charter, to enable them to confer the title of "Chartered Architect" upon all persons passing a stated examination. It was understood that this decision was come to owing to the R.I.B.A. Council having been notified by their legal advisers that the Institute could not promote a Parliamentary Bill on this subject, because of certain constitutional disabilities under which the non-corporate class of Licentiates were suffering. It then became, from the Society's point of view, a question of voluntary versus statutory Registration, the essential difference between the Registration proposals of the R.I.B.A. and of the Society being that the former favoured a policy of voluntary Registration within the Institute, and the latter a policy of statutory Registration for every member of the profession, whether belonging to any architectural body or not. Committees of Associates and Licentiates were formed, with a view of watching their own interests. The Council had, in the meantime, taken steps to submit a counter-petition to the Privy Council, in the event of the Charter proposals being proceeded with.

Last March the then President of the R.I.B.A. circularised the allied societies to

the effect that the Council of the Institute had decided to oppose the Society's Registration Bill, on the grounds that it was detrimental to the interests of the Institute, and conflicted fundamentally with their new policy of Registration by Charter. The Council thereupon issued a counter-statement, showing at a glance the difference between the proposals of the two bodies. About this time the Auctioneers' and Estate Agents' Institute presented a Bill to Parliament, the object of which was to establish a register of persons practising as auctioneers or estate agents dealing with real estate, and to prescribe the qualifications for admission to the register. The effect of the measure, if it became law, would be that an architect who is not a member of the Society of Architects or of one of the other scheduled bodies, would not be allowed to make a valuation of real property for a consideration unless he was registered under the Act. As there are a number of architects who do not belong to the Society or any other architectural body, and most of them have to make valuations of property from time to time for various purposes, they are considerably affected by the proposed Bill. In order to continue to make these valuations they would have to register under the Act as auctioneers and estate agents, and pay an additional tax for registration fee and annual license. The Society of Architects is one of the professional bodies scheduled in the Bill as being exempt from the operation of the Act. Here is one instance of the advantage of membership in a recognised professional body which is able to look after the interests of its members.

The outbreak of the war has put a stop for the present to the promotion of the Institute Charter in the Privy Council and of the Society's Bill in Parliament. The hope has been expressed that as the war has had the good effect of drawing together the members of the architectural profession, without reference to architectural politics, when peace is declared some method may by then have been arrived at of settling any little differences in regard to the means to be adopted in attaining the end which both the Society and the Institute have in view.

The New Zealand Institute of Architects were successful last July in obtaining a Registration Act, having accomplished in one year what the profession at home has been seeking for thirty years. The New Zealand Bill was, however, practically a Government measure. Progress has also been made in some parts of Canada which have followed the lead set by Alberta and other provinces of that Dominion. In Canada all the provincial architectural bodies are federated with the Royal Architectural Institute of Canadian Architects, which greatly facilitates the organisation, administration, and control of professional matters. The Royal Victorian Institute of Architects, Melbourne, is proceeding with a Registration Bill, and a similar measure is to be introduced in New South Wales, and also in Tasmania.

One of the duties devolving upon the Council, through its Practice Committee, is to consider, and, where possible, advise on questions relating to professional practice placed before it by members. None of the cases which have been before the Council have been of sufficient general importance in principle to be sent immediately to the Board of Professional Defence; but in several cases the knowledge that the matter in dispute had been referred to the Council of the Society was sufficient to induce the parties to come to terms.

Another, and less pleasant, duty of the Council is to investigate any allegations brought against members for a breach of professional etiquette or of the Society's regulations. In every case where such an allegation has been made, the Council has held a most careful inquiry into the facts, and when the charge has been proved to its satisfaction, and the member concerned has not been able to give a satisfactory explanation, his resignation has been demanded and received. The Council has taken up every case of unsatisfactory architectural competitions brought to its notice, and where it has failed to secure

amendments the competition has been barred, and members warned not to take part therein. On three occasions during the year the warning was disregarded, and the architects concerned are no longer members of the Society. The Society has acted in conjunction with the R.I.B.A. in this matter, and as the promoters of competitions are realising that responsible architects, particularly those who are members of architectural bodies, will not take part where the conditions are unsatisfactory, the profession itself is beginning to benefit by the increased recognition of its status by public bodies and others. In some cases members have entered for competitions and prepared their drawings without consulting the Society first, and have afterwards found themselves in a difficult position when the competition has been barred.

Your Council referred to a committee the question of making an inquiry into the reasons for the excessive cost of building operations in the United Kingdom, as compared with that in other countries, with a view of suggesting a remedy if possible. Owing to the outbreak of war the inquiries have been suspended for the present.

A Model Form of Conditions of Contract has been drafted for the Society by Mr. W. Valentine Ball, barrister-at-law, based on suggestions made after long and careful inquiry into the matter by the Council. The Council has also drafted, under legal guidance, a number of forms for party-wall and other notices under the London Building Act. It is hoped that these documents, more particularly the form of building contract, may be found of practical service to the members. Three years ago, in response to an invitation from the Engineering Standards Committee, the Council appointed Mr. B. R. Tucker to represent them on the Sectional Committee on Vitri-fied Ware Pipes, which was entrusted with the drafting of the British Standard Specification. This committee has since completed its work, and its report has been approved and issued by the main committee. The Institute of Builders approached the Council regarding a proviso which the Institute had authorised its members to endorse on all future tenders for building undertakings, with a view of providing for (a) the adjustment of any account for extras, due to an increase in the cost of labour or materials owing to the war, and (b) a reasonable extension of time for any delay in obtaining labour or material owing to the same cause. The Council saw no objection to the principle of insurance against war risks; but it raised some objections to the form of the proviso, and proposed a revised clause, which the Institute of Builders has circulated to its members.

The Council was approached by the Surveyors' Institution, who drew attention to the obstacle against accurate estimating imposed by the practice of leaving in bills of quantities, the cutting away and attendance on sub-contractors to be priced in a lump sum by the principal contractor. As the ability of the Surveyors' Institution to deal with the subject of complaint depended largely upon the information placed at its disposal by architects, the co-operation of the Society of Architects was invited. The Council was in sympathy with the proposals of the Surveyors' Institution in principle, but suggested modifications in the method of carrying them into effect. The matter was still under negotiation at the end of the session. The Council has been able successfully to maintain the principle that candidature for important public architectural appointments should not be restricted to members of any one architectural body, but should be open to any bona-fide member of the profession. The Council has also taken up with public bodies the question of the employment of practising architects rather than officials in connection with architectural works of a public character, and has approached a Government department relative to officials undertaking outside architectural work in their spare time, to the detriment of private practitioners.

The South African Branch has made good

progress during the year, and is in a strong position numerically and financially. The result of the action of the Society conjointly with that of other similar bodies in South Africa, was that the whole question of Government competitions was considered by the Minister of Public Works, who undertook that if the architectural bodies concerned would appoint an advisory board from among their own members, he would in the future consult that board, and act with them when promoting any public competition.

The revenue account shows a decrease in the expenses generally, particularly in printing and stationery, salaries, and legal expenses. The Publications account shows a decrease in expenses, although it includes the cost of reprinting the Library Catalogue, which is a new item. The examination expenses have been less, and also the amount written off for bad debts, and there has been a considerable drop in the bank interest, due to the reduction of the overdraft. After allowing for depreciation of premises, furniture, etc., there remains a surplus for the year of £296, against £216 for last year, an increase of £80. The Society's donation account shows a new item of 100 guineas to the Architects' War Committee, an unforeseen contingency, which has reduced the surplus carried to the balance-sheet to £66, a little less than last year. Had it not been for this, this surplus would have been more than twice as much as last year. The income shows an increase in the members' subscriptions, a new item in Graduate subscriptions, and a drop in the Students' fees, the latter being due, to some extent, to the operation of the articles of association in restricting this class. The income from publications has increased, and receipts from examination fees have fallen off considerably. The total income for the year is £2,903 8s. 6d., against £2,903 16s. 5d. last year, a somewhat curious coincidence. The total surplus of assets over liabilities is £3,252, or £116 more than last year. The result, so far as the Council's anticipation is concerned, is more favourable than they expected.

Early in the session the Beaux Arts Committee voluntarily released the Society from its financial guarantee. The Committee asked that the privileges of using the Society's premises for its meetings and the clerical staff for its work might be renewed. The Council gladly renewed these facilities, and in addition made a second donation of £100 from the Society's funds in furtherance of the Committee's work. The Atelier has now become firmly established, and is recognised, even by those who at one time opposed the scheme, to be carrying on the traditions of the Beaux Arts method of architectural training on the right lines. The Council is satisfied that its action in bringing into existence the Beaux Arts Committee, and materially assisting in this work, is one of the best things the Society has done, and is justified by results. There is little to show for it from a material point of view; but the influence which the Atelier is having on the future of architecture in Britain is already being felt, and will undoubtedly be to the permanent good of the profession and the community. The growth and development of the Atelier has been such that it was decided by the Beaux Arts Committee to establish a second Atelier in London, and premises had been secured when the outbreak of war put a stop for the present to any further progress in this direction. The Atelier is in the meantime carrying on its work successfully from the educational point of view, but under some material difficulties.

At the request of the Incorporated Clerks of Works' Association of Great Britain, a committee of the Council received a deputation from that body, with a view to ventilating some questions affecting the interests of clerks of the works, more particularly in regard to the rates of wages offered to them by public bodies. The Council was able to assure the deputation that they were in accord with them on this point. Another question raised by the deputation was as to who was liable in the event of injury or fatality to the clerk of the works in the discharge of his duty. The Council, on sub-

sequently going further into the matter, was advised that an injured person can claim for injury under common law, the Employers' Liability Act, or the Workmen's Compensation Act, and that, therefore, building owners should insure against this risk. The architect should in his own interests make sure that he does not incur any liability in the event of the building owner becoming insolvent, or from any other cause.

Within a few days of the outbreak of war, a meeting of architects open to the whole of the profession was held at Conduit-street to consider the best way in which architects might offer their services to the nation during the crisis. Two sub-committees were subsequently formed, one for dealing with benevolence and the other with administration. The Council unanimously decided to support the movement by placing at the disposal of the Architects' War Committee the Society's premises and clerical staff for the use of any of the sub-committees. Further, it voted a grant of one hundred guineas as a contribution to a fund to be formed for providing paid work for architects whose means of livelihood were stopped by the war. It also suggested the formation of a professional employment sub-committee for the administration of the fund, and outlined a scheme to enable architects in distress owing to the war to earn a living wage by doing work of a kind which would be a benefit to the community, rather than have to depend upon benevolent aid. These offers, donations, and proposals were accepted and adopted by the Architects' War Committee. The benevolent sub-committee has developed into the Professional Employment Committee. Mr. Percy B. Tubbs, F.R.I.B.A., M.S.A., is the vice-chairman of this latter committee, and Mr. C. McArthur Butler is the acting hon. secretary. The Professional Employment Committee is developing a scheme of civic surveys under the guidance of Mr. Lanchester, by which means it is hoped to offer employment not only to architects and surveyors, but to members of many other allied professions.

At least one member of the Society is a prisoner of war, another has been mentioned in despatches, and all who are on active service are taking their full share of the burden.

Mr. C. A. Kirby, M.Inst.C.E., of Boston, Lincs, district engineer for the G.N.R. Company, has retired, after fifty-one years' service.

The corporation of Nelson, Lincs, have adopted an amended plan for public abattoirs to be built at an estimated outlay of £14,940.

The Empire Picture House Theatre, which has been erected between the Station square and Baxtergate, Whitby, and which was opened last week, is from designs by Mr. A. E. Young, architect, of Whitby. The contractor was Mr. W. Lawson, of Sleights.

At the invitation of the Board of Trade, the chair and furniture manufacturers of High Wycombe opened yesterday (Thursday) a two-days' exhibition in Cheapside of British-made chairs designed and manufactured to capture the well-known Austrian bentwood chair industry.

Mr. Robert Fowler Sturge, F.S.I., of Bristol, died on Saturday at his residence, 101, Pembroke-road, Clifton, at the age of seventy-nine. A land agent and surveyor, Mr. Sturge acted as agent for the landed estates of the Bristol Municipal Charities. The funeral took place on Wednesday at the Friends' Burial Ground, Kingsweston.

Mr. Maurice E. Webb, M.A., son of Sir Aston Webb, R.A., and President of the Architectural Association, who patriotically enlisted in the Royal Engineers as a private, has obtained a commission in that regiment, as have also Mr. R. M. Pigott, A.R.I.B.A., and Mr. P. Butt, also members of the A.A.; and Mr. L. M. Gotch, A.R.I.B.A., has been promoted to sergeant.

The directors of the London County and Westminster Bank, Ltd., after making provision for bad and doubtful debts, and applying £336,600 in writing down investments, have declared a dividend of 10½ per cent. for the past half-year (less Income-tax), making a total distribution of 21½ per cent. for the year 1914, leaving a balance of £160,112 to be carried forward.

Corrente Calamo.

It seems true, as we stated last week, that although the Commissioners of Inland Revenue are still claiming increment duty in cases where it is admitted there has been no rise in the value of the divested site, the Government has undertaken to delay such cases where it can be shown that the one-clause Bill promised on July 23 last by Mr. Asquith would alter the claim. We have once more to insist that the statutory remedy should be applied as soon as possible, and that the building trade should not be tricked once again. The whole history of these claims is disgraceful to all concerned. One fact on which we have not previously dwelt has an almost sinister aspect. As the "Land Union Journal" reminds us in its January issue, the Walker case—the Scottish case on all fours with the Lumsden case this side the Border—was decided on February 26, 1913, in the Scottish Lands Valuation Appeal Court, and was against the Commissioners of Inland Revenue, two judges being against and one for the Commissioners. The judgment in the Lumsden case was delivered four months later in the Court of Appeal in England, and was in favour of the Commissioners, one judge being against and two for them.

The Walker case, coming from the Scottish Land Court, was in the House of Lords list to be heard before the Lumsden case. The Attorney-General took the precaution to let the House of Lords know that the two cases were coming on, and that they both raised practically the same point. The Lord Chancellor communicated with the Attorney-General, and told him he thought it would be better if the Scottish case could wait till the Lumsden case had been decided. Thus, in spite of the fact that the Walker case, with a standing judgment adverse to the Crown, stood first on the list, and in spite of the Attorney-General's wish that both cases should be taken together, the Lumsden case, with a standing judgment in favour of the Crown, was taken first, and taken alone! Was this purposely done?

The Lumsden case came before the House of Lords in June last. Although the far-reaching importance of the issue was known, the case was heard by an even number of judges, the Lord Chancellor, Lord Shaw, Lord Moulton, and Lord Parmoor. In the result the Court was equally divided, the Lord Chancellor and Lord Shaw supporting the Commissioners and upholding the White Paper instructions, while Lord Moulton and Lord Parmoor gave opinions in favour of the appellant. The Lord Chancellor, in moving the judgment of the House, said: "Whereas, in this case the opinion of the House is equally divided, your Lordships' practice is, presuming in favour of the negative, to affirm the judgment appealed from, but without costs." Thus the appeal was dismissed, and the judgment of the majority of the Court of Appeal, two to one, was affirmed. If the Scottish appeal, which was held over in order to abide the hearing of the Lumsden case, had come up on the paper on the same day, and with the Court equally divided as in the Lumsden case, the result would have been, presuming in favour of the negative again, that the judgment of the Scottish Lands Valuation Court would have stood, and the

judgment of the House of Lords would have been moved against the Commissioners of Inland Revenue. As Lord Loreburn said to Mrs. Walker's counsel, "If you had come first, you would have won, and the law would have been settled your way." The Walker case came before the House of Lords, and was decided on December 3 last. The conclusion to which the Judges came was that they were bound by the decision of the House in the Lumsden case, and that this decision covered the whole of the Walker case. With evident reluctance, they therefore gave their judgment in favour of the Commissioners. Once again we ask, Was it mere accident or manoeuvring that secured priority for the Lumsden case, in order to defeat justice?

An informative brochure is issued by the Associated Portland Cement Manufacturers (1900), Ltd., of Portland House, Lloyd's Avenue, London, E.C., entitled "Concrete Roads and Kerbs," which is well worth careful perusal by all concerned. The many advantages that concrete and reinforced concrete possess as building and constructional material, as well as the economy that follows its use, are well appreciated in Great Britain, and we have little doubt that equal advantages and economy will attend the use of concrete roads. As detailed fully in the pamphlet, the practice in America is to reinforce all concrete roads over 20ft. wide, below that width reinforcement is optional. Where no reinforcement is employed transverse and longitudinal joints are provided, and the edges of the former are frequently protected by steel plates provided with shear members, which tie them securely to the concrete. By the use of reinforcement, however, joints are rendered unnecessary, and a possible source of weakness is thereby avoided. The report of the Committee on Reinforcement read at the Chicago Conference, and quoted on p. 33, fairly summarises the advantages that are claimed for using a reinforcement. A special feature of all concrete roadwork is that moisture improves and hardens it. Therefore, in damp situations a properly constructed concrete road would remain unimpaired, and, particularly if reinforced, maintain a perfect surface under conditions that would quickly lead to disintegration of other types of roads. While the first cost of concrete roads will prove to be actually less than that of other forms of good road, there is no doubt that in regard to maintenance the expenditure on concrete roads will show a considerable annual saving over the maintenance charges of all other roads. The fact is established by American experience over a number of years. The only English figures given—those relating to the Chester road on p. 19—confirm this statement. Following this actual saving in cash is, of course, the decided advantage of infrequent interruption of traffic owing to the practical absence of repairs, and this in busy thoroughfares is a matter of no small importance. At the moment six experimental sections of concrete roads are being laid in Kent by the Kent County Council, the specification and estimated cost of which are given. These are very valuable. The road at Chester, referred to on p. 19, cost only 3s. 10d. per super. yard, including excavations and preparing the base. All costs must necessarily vary in various districts, according to the cost in such districts; but the available figures compare very favourably with other forms of construction.

The following appeared in a third supplement of the "London Gazette" of Jan. 5: "28th (County of London) Battalion the London Regiment (Artists' Rifles). Captain Harry P. Edwards to be Major (temporary). Dated November 16, 1914." Major Edwards is the chairman of the Strand Newspaper Co., Ltd.; but since the commencement of the war his activities have been devoted entirely to his military duties. The "Artists'" Corps already has one battalion at the front, the second is now at Roehampton-lane, S.W., and a third battalion is in process of formation. It was originally formed in May, 1860, and was commanded by Lord Leighton, being composed of painters, architects, sculptors, lawyers, doctors, medical students—in fact, all classes of professional men, old public-school and university men, and the like. Applications should be made at once at the depot of the corps, Dukes-road, Euston-road, W.C., by those coming under any of the foregoing categories, who are willing to undertake the obligation of foreign service.

All will endorse Miss Lowndes' eloquent protest in the "Englishwoman" against the barbarous destruction of the precious monuments of Europe by the Germans, and the worse deeds they threaten in Flanders when they are forced to retreat. Truly, as she says, the world's art is threatened by the world's artillery:—

If our buildings are to survive for the centuries to come, we learn from German methods in the present war, it can only be by concerted action, and the most resolute determination on the part of the civilised world, that this end can be attained. Shall our picture galleries be dug-out caves, like tunnels on the underground railways? Shall our great sculpture be stored in holes of the earth, and our museums hidden in borings beneath the mountains? Shall the world perforce return to the habitations of the Troglodytes for the housing of its treasures and the safeguarding of its non-combatant citizens in time of war? It is impossible to believe that the Old and the New World shall not protest together against such hideous necessities, and, drawing together in council on the conclusion of peace, establish a pact under which the nations of the earth shall be enabled to safeguard for posterity their glorious heritage of beauty, and curb the frightful exploitation of the powers of artillery and explosives.

But what if the "pact" is disregarded by the next degenerate Power, which, driven mad by militarism, as ruthlessly sacrifices the priceless legacies of real culture to its loathsome idol?

An inside, professional view of the architect's scale of remuneration is contained in the following humorous verses, recited at a recent meeting of the Cleveland Chapter of the American Institute of Architects:

Sing a song of six per cent.
Pockets full of dough,
That's what the client thinks
Because he doesn't know.
Poor darned architect
Knows he's just a slob;
Six per cent. is not so much
Unless you've got a job.

Sing a song of six per cent.,
Arch'tec full of rye;
Million-dollar commissions
Float before his eye.
When the night is over,
How his head does ache!
A yodish fat at two per cent.
Is what he'll gladly take.

Mr. Joseph Hill, of Selborne, Leigham Court-road, Streatham, governing director of Messrs. Higgs and Hill, Ltd., builders of Crown Works, South Lambeth, who died on Nov. 17 last, aged seventy-five, left estate of the gross value of £49,617, of which £28,815 is net personally.

The largest army remount depot in the kingdom has just been completed in Lathom Park, Ormskirk, which has been placed at the disposal of the War Office by the Earl of Lathom. The depot, the construction of which has occupied four months and cost over £70,000, has accommodation for 7,000 horses and 1,500 groom.

Our Illustrations.

ROYAL ACADEMY TRAVELLING STUDENTSHIP PRIZE DESIGN FOR A PICTURE GALLERY.

This is the double-page detail we promised last week, when giving the view, plan, elevations, and sections of this design by Mr. William H. Hamlyn, the winner of the British Institution Scholarship in Architecture for £100, in 1913.

MANCHESTER ROYAL EXCHANGE.

THE AMENDED DESIGN.

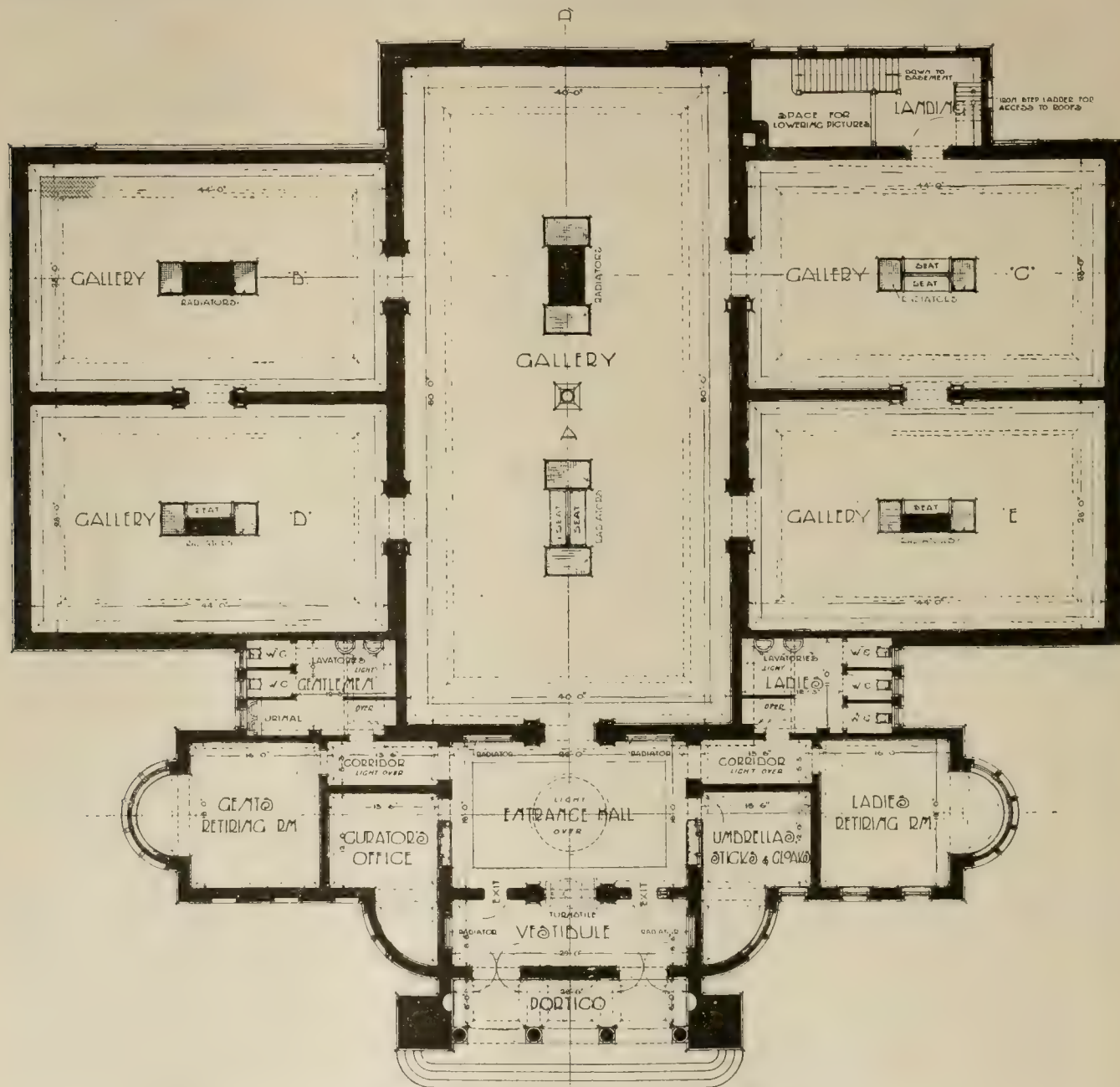
It will be remembered that in the competition for this work the design submitted

architectural character of the present building is to be maintained as far as consistent with the largely increased size of the structure. The Exchange is to provide space for members, on one level, of something like 7,000 square yards, in one great hall, with a south bay corresponding to the present Exchange, which forms the north bay of the completed building. The two bays are connected by an open arched arcade the full height of the hall. The principal entrance is to be on the Exchange-street, St. Ann's-square front, and there are to be a central entrance from Cross-street, and entrances at each of the corners of the building. Adjoining the principal entrance and on each side of it is to be a loggia on the Exchange level to replace the portico "flags" on which

about two and a half years; but it is the intention to open parts of the new Exchange-room as soon as completed.

THE SHIPLEY ART GALLERY, GATESHEAD.

This memorial art gallery is being erected in Prince Consort-road, Gateshead. The position chosen by the trustees and the Shipley Art Gallery Committee of Gateshead Council is one which lends itself to an important architectural addition to the Borough. The extensive site has enabled the architect to arrange the whole of the picture galleries on one floor, and thus obtain top lighting. The building is on Classical lines, and is set back from the roadway some 22ft. This allows of the provision of a carriage-



THE SHIPLEY ART GALLERY, GATESHEAD.—MR. ARTHUR STOCKWELL, M.S.A., Architect.

by Messrs. Bradshaw, Gass, and Hope was placed first by the assessor, Mr. J. S. Gibson. Our review of the competition appeared in our issue of Jan. 23, 1914, and, as we stated then, after the usual permission to photograph was given, and our illustrations were ready for publication, we were forbidden by telegram and letter to issue them. We subsequently learned that modifications of the design were in progress, and we are now able to give a view showing the principal entrance and what will be the Exchange-street front of the completed extension. The general

the members now congregate. Shops are to be placed on all frontages, and also in the arcade, which will take the place of Bank-street. A new restaurant, with a billiard-room, is to be arranged on the ground floor. A large hall, entered from Cross-street, Market-street, and the arcade, will give space for a futures market, or it can be used as an exhibition hall. Already the old buildings are cleared from the site, and the foundations contract nearly completed. The extension is to be carried out and completed in sections. Completion is expected within

drive to the main entrance and portico, which is raised, and is approached by steps. Beyond the portico are a vestibule and entrance-hall. The hall has a panelled dado and plaster decoration, and is lighted by a circular dome. On the sides of the entrance-hall are the curator's office, cloak-room, ladies' and gentlemen's retiring-rooms and conveniences. The main portion of the building consists of five picture galleries, arranged with the main gallery, 80ft. by 40ft., in the centre, and two smaller galleries, each 44ft. by 28ft., on each side—the whole giving

sufficient wall space to exhibit the five hundred pictures selected by the Gateshead Council. The flooring is of fireproof material, finished in marble, mosaic, and parquetry. The woodwork is in polished oak. In the basement there are provided repair and store-rooms, strong-room, and heating chamber. The building is of stone, and the entrance portico has four columns of the Corinthian Order, flanked at each end by big rusticated piers, which are surmounted by figures. The gallery buildings are of brick, with stone dressings and balustrade. Electric lamps are fixed near the ceiling, and the place will be heated by hot water on the low-pressure system, radiators being fixed in the centre of each gallery. The contractors are Messrs. J. and W. Lowry, of Corporation street, Newcastle, and Mr. Arthur Stockwell, M.S.A., of Newcastle and Gosforth, is the architect. The cost is to be about £25,000.

HOUSE AT HAMBLEDON, GODALMING, SURREY.

We published a detail perspective of the garden porch and terraced front of this country house in our issue for May 26, 1911, when a plan of the building appeared. To-day we are giving a photograph of the garden front as carried out. The building occupies a site on the top of a low hill, and enjoys gentle slopes on every side; but on the entrance front the land rises only slightly in a well-wooded surrounding property, protected well from the northern and easterly winds. Mr. Seward was the builder, from Wokingham. Clamp bricks with red Wrotham quoins are employed, also deep red tiles for the roof from the same potteries. The architect is Mr. Ernest Newton, A.R.A., P.R.I.B.A.

AN ORIGINAL STUDY FROM THE NUDE. BY ALFRED STEVENS (THE SCULPTOR OF THE WELLINGTON MONUMENT, ST. PAUL'S CATHEDRAL).

Just now, both in the Victoria and Albert Museum, South Kensington, and at the Tate Gallery, there are on view two representative collections of original sketches and drawings by Alfred Stevens, including some big cartoons lent by Sir George Holford and Mr. E. Alfred B. Drury, R.A., of the original designs for the decoration of the famous dining-room at Dorchester House, Park-lane, carried out by this master; these are described in the catalogue of the exhibition now open to the public in Grosvenor-road, Piccadilly, as "the last important addition likely to be made to the harvest of his work." Some critics have vainly attempted to belittle Stevens from time to time, speaking of him as a stylist who executed more or less successfully secondhand inspirations from the works of Michael Angelo and Raphael. The drawings now gathered together by more qualified judges add to Stevens's reputation as an original and masterly draughtsman, actuated by a keen conception of the music of form, an intensity of definition intuitively expressed, and a genuine recognition of beauty. A good many of the drawings already referred to are very similar to the red-chalk study work which is reproduced among our illustrations to-day. The original is thus inscribed on the back, as evidence of its authenticity: "This sketch by Alfred Stevens is given to Maurice B. Adams, Esq., with best wishes for his reformation, from his friend Hugh Stannus, 12 vii. 1890." Hugh Stannus, it will be remembered, completed Stevens's work after he died, and he was his pupil as well as executor; also Stannus was the painstaking author of the exceedingly handsome folio memoir to his master, finely bound in an appropriate style, and published by the Autotype Company in 1891, with reproductions from photographs of Stevens's best-known works, as well as some excellent facsimiles of the artist's figure drawings. The one now reproduced is, however, not included. Alfred Stevens was born in 1818 in the sequestered little town of Blandford Forum, in Dorset, in mean circumstances, his father being a house painter; but from his earliest years the boy

was fond of drawing and copying pictures. One of these childish copies was rescued from a local tavern, where his father had left it in settlement of a drink score. The Hon. and Rev. Samuel Best, rector of a neighbouring parish, happened to see some of Alfred's early attempts, which he recognised as indicative of intuitive capacities, and he generously endeavoured to place the boy under Landseer, who demanded £500 as a premium, which was, of course, out of the question. Before long, with £60 in his pocket, subscribed for the purpose, Stevens set out alone for Italy in 1833, when he was only fifteen years of age. His attention was directed specially to the designs of Salvator Rosa; but he was more impressed by the works of Andrea del Sarto in Naples. There he spent his first year abroad and studied the decorations at Pompeii. Tramping his way, he earned his daily bread by drawing pencil portraits, which he washed over with light colour, to fix his medium and heighten the effects. Travelling as best he might under such conditions, he reached Rome, where he set to work making copies of Old Masters for a living. Continuing this course, he worked for three years in Florence as an unattached student. Ultimately the well-known Danish sculptor Thorwaldsen employed Stevens as his assistant. After a while Stevens returned home; but, meeting with sparse success, was glad to accept an appointment in the School of Design, then held in Somerset House, Strand, where, he says, he became "professor of everything" at a salary of £150 a year. Soon his restless genius convinced him that he was "a square man in a round hole," and from a letter to a friend we learn that he "was disgusted with the meddling supervision by ignorant Government clerks," whose names have long ago passed into oblivion, although they occupied, no doubt, far better paid posts. Stevens had to teach architectural drawing and perspective to morning classes for two hours, and also ornamental or decorative painting daily, if required. After two years' drudgery of this sort he remarked, "I am heartily sick of it," and, consequently, he relinquished his position. Sir Robert Peel, with more discrimination, noticed his merits and gave Stevens some decorations to do, while Professor Cockerell employed him to design some panels for the Fitzwilliam Museum at Cambridge. These do not appear to have survived. He also made for the same eminent architect a drawing and studies for the sculpture of St. George's Hall, Liverpool, then being completed by Cockerell after the death of H. L. Elmes. Alfred Stevens's designs for Sheffield manufacturers are well known, and the work he did in this way went very far to uphold the reputation of England in the 1851 Exhibition. The Wellington monument was competed for in 1857, and he won one of the five premiums of £100. After a model of the nave arch had been made it was discovered that his design alone would be suitable for the site, and, consequently, he was selected for the work. What happened need not be retold here. Fortunately, the monument has at last been finished as Stevens designed it, and it now stands, surmounted by an equestrian figure, executed by Mr. John Tweed from Stevens' rough model, where it was originally intended to be placed. Dean Milman, it will be remembered, would not allow the crowning figure to be added, saying a man on horseback was out of place in a church. Stevens's work at Dorchester House would alone have made a reputation, and the majolica work at South Kensington was from his designs. He died in 1875, and has left a legacy to his country. There is a little volume called "Alfred Stevens: a Biographical Study," by Walter Armstrong, which is worth mentioning, though it does not compare with Hugh Stannus's big work, from which we gave an example in our issue of November 13, 1891.

NURSERY FOR CHILDREN, BARNET UNION.

This building, of which Messrs. F. E. Williams, A.R.I.B.A., and Alfred Cox, A.R.I.B.A., are the architects, is for the

accommodation of infants and young children up to three years of age, with a staff of four nurses. It is necessarily plain in treatment; but an attempt is made to give it some architectural character suitable to its use. The outside walls are faced with stock bricks, with thin reds to the chimneys and columns of verandah. The roof is covered with thick red sand-faced tiles. Internally the walls are plastered generally, the day-room having a dado 5ft. high in Keene's. Bathrooms, w.c., larders, etc., lined with glazed tiles. The heating is by open fireplaces and radiators. Mr. J. Thomas, of Enfield, was the general contractor.

OBITUARY.

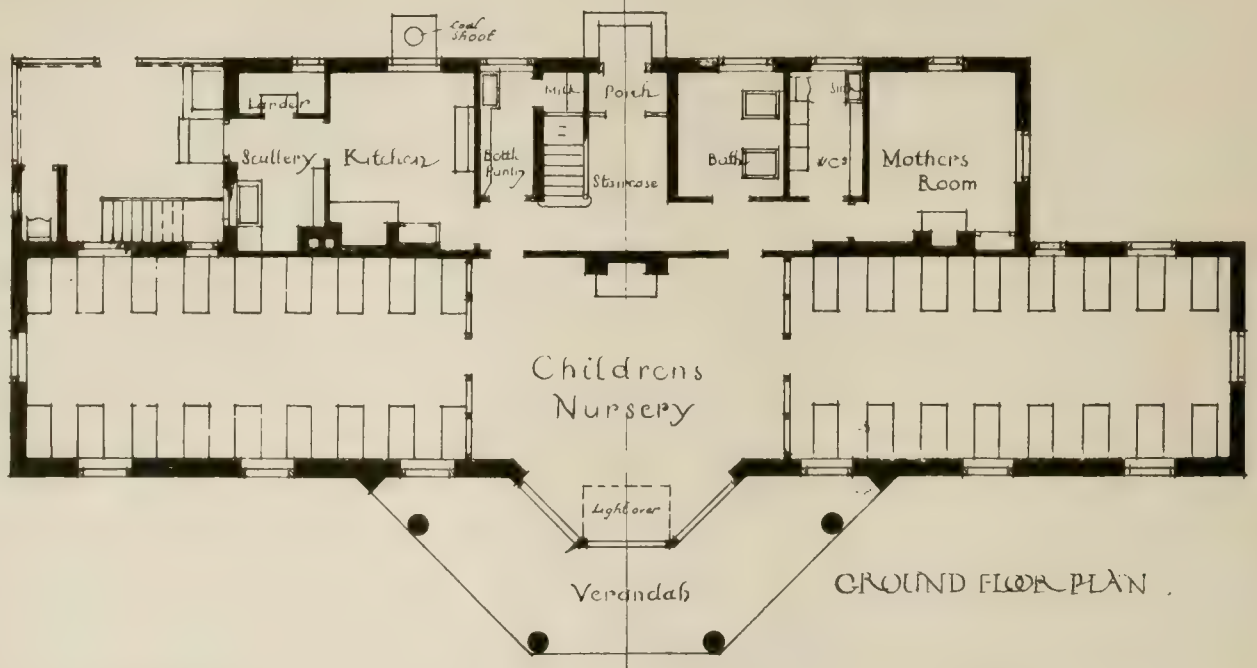
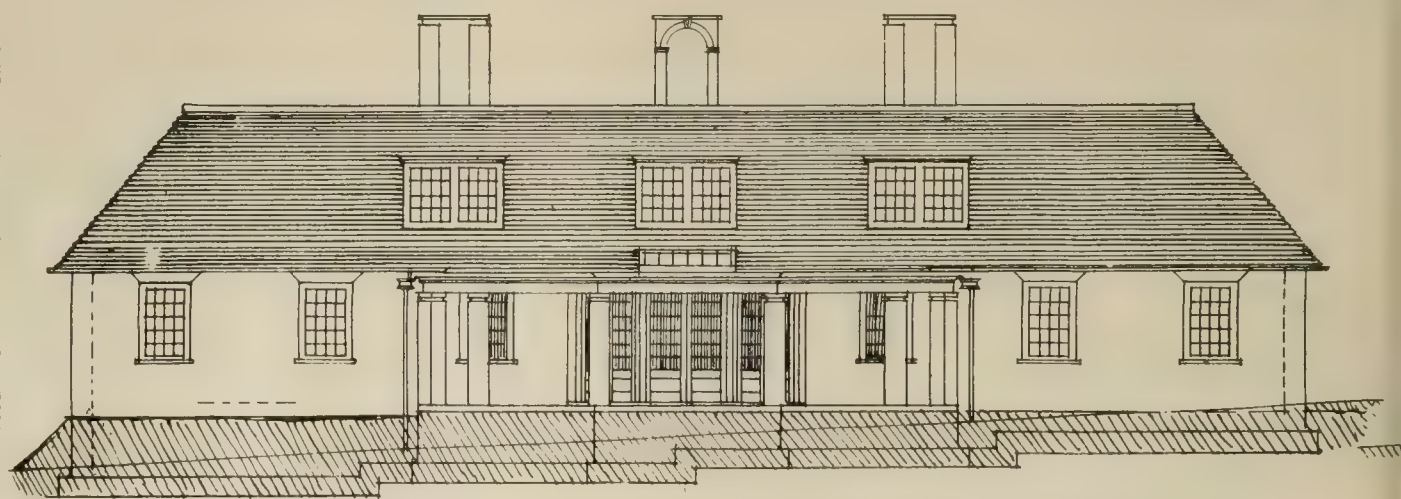
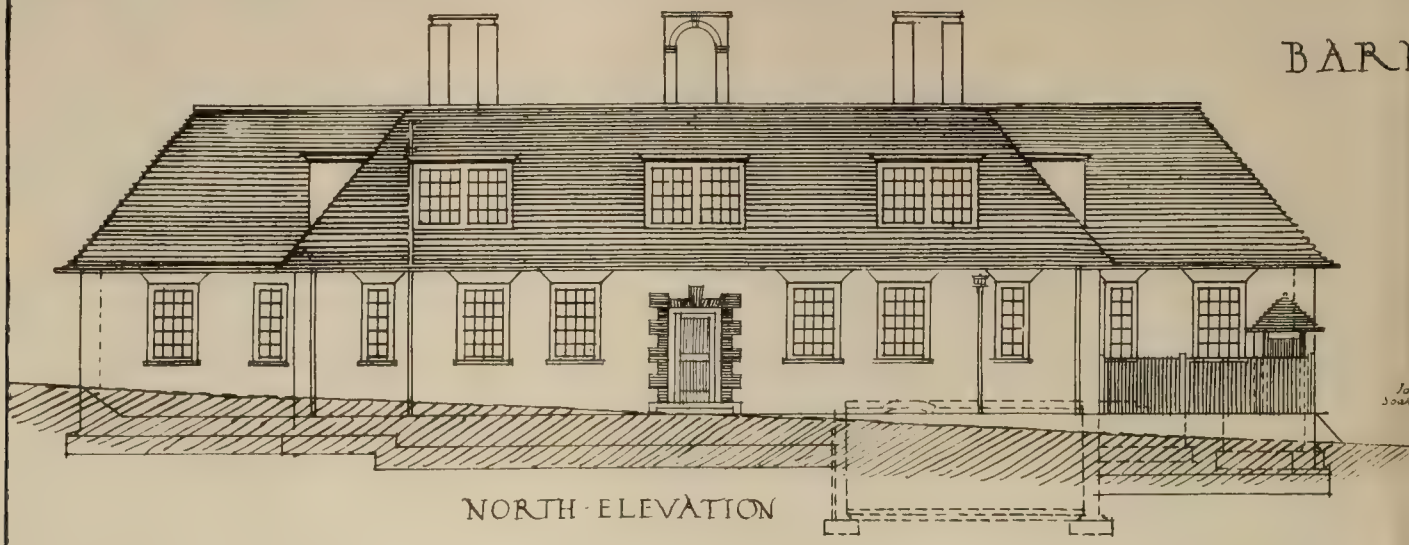
Mr. Francis Edward FitzJohn Crisp, second lieutenant in the 1st Grenadier Guards, who was fatally shot by a sniper on the 5th inst., won, in December, 1907, the gold medal and the travelling studentship of £200 at the Royal Academy for a historical painting, the silver medal for a painting of a figure from life, the second Armitage prize for a design in monochrome for a figure picture, and the second prize for a set of six drawings of a figure from the life. During his subsequent travels abroad he spent much time in Italy. One of his latest canvases dealt with oxen ploughing in Tuscany; it was accepted last spring by the Council of the Royal Academy, but eventually its size prevented it being hung. An exhibition of his oil-paintings and water-colours was held in Bond-street some two years ago. Mr. Crisp was in his thirty-third year.

Mr. William Wilkinson Squire, chief engineer of the Bristol Corporation Docks at Bristol, Avonmouth, and Portishead, died on Friday at Clifton at the age of sixty years. For some time Mr. Squire had been seriously ill from a heart affection, and in the recent arbitration proceedings between the contractors of the Royal Edward Dock and the corporation, he was not well enough to appear or to take any part in what was done. Mr. Squire was a pupil of the late Mr. Geo. Fosbery Lyster, M.Inst.C.E., engineer-in-chief to the Mersey Docks and Harbour Board, and afterwards one of his assistants. He then went to Hull as assistant engineer under Mr. R. A. Marillier, M.Inst.C.E., engineer to the Hull Dock Company. In 1881 he was selected to go out to India as chief assistant to the engineer to the trustees of the port of Bombay. After acting as chief engineer for three years Mr. Squire was permanently appointed chief engineer to the port of Bombay in 1892. For the next six years he was sole engineering adviser to the port trustees. During his connection with the port of Bombay important schemes were designed and carried out. These included a dock of over 24 acres, and also a graving dock. Mr. Squire was afterwards engaged on dock and harbour work by Sir John Wolfe Barry, and in May, 1890, when the Bristol Dock Committee were called upon to fill the vacancy caused by the lamented death of their engineer, Mr. McCurich, Mr. Squire was appointed. Mr. Squire at once, in conjunction with Sir John Wolfe Barry and Sir Benjamin Baker, investigated the relative merits of dockising the river or constructing new docks at Avonmouth. They reported that dockisation would be too costly, and proposed the Royal Edward Dock scheme, for which Mr. Squire was engineer. Since the breakdown of Mr. Squire's health, a couple of years ago, the practical responsibility has rested upon the deputy-engineer, Mr. Peace.

The Eastern Valleys Joint Sewerage Board has deposited a Bill in Parliament for authority to construct outfall works in Monmouthshire. The cost of the scheme is estimated at £120,000.

A soldiers' and sailors' hall is being built outside the lock gates at Southampton. It is of corrugated iron, with matchboarding inside. The main hall will be 70ft. by 40ft. There will also be a billiard-room of 30ft. by 22ft., a reading-room of 30ft. by 18ft., a temperance canteen with kitchen, and a cloakroom, while in the main hall a fixed platform is to be put up. The builder is Mr. Cawte, of Shirley.

BARN

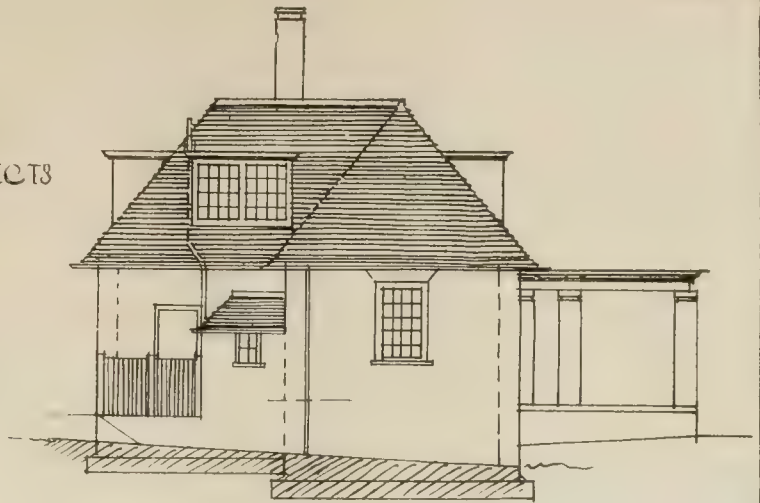


JANUARY 15, 1915.

T UNION
NURSERY FOR CHILDREN
MESS^{RS} WILLIAMS & COX ARCHITECTS

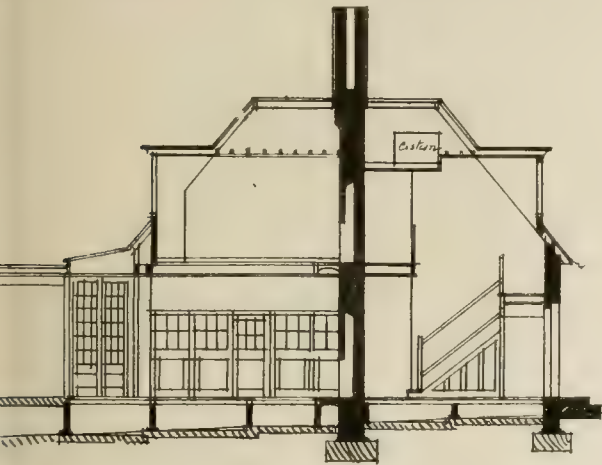


CELLAR PLAN



WEST ELEVATION

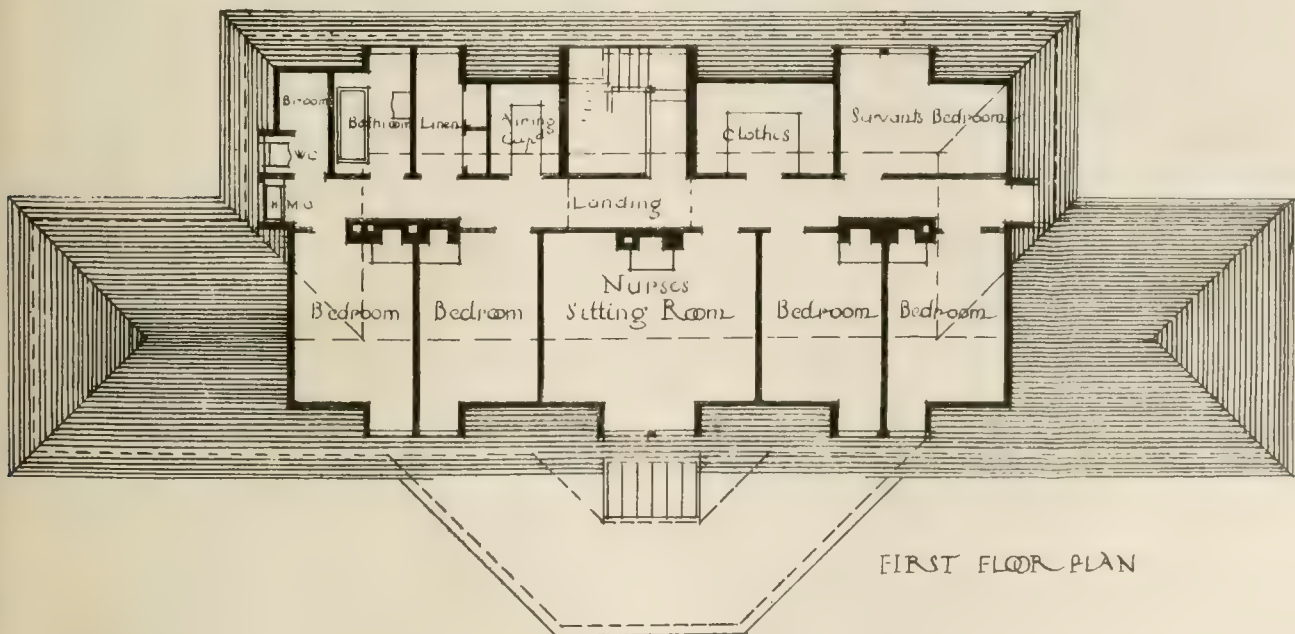
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SECTION AB



EAST ELEVATION



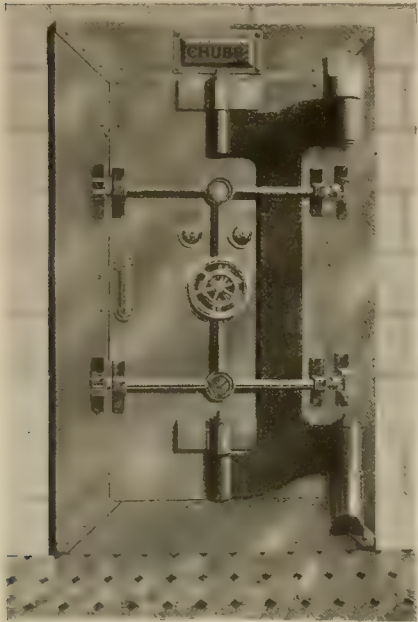
FIRST FLOOR PLAN

CHUBB'S TRIPLE TREASURY DOOR.

This door is a type of a number of treasury doors recently built by Messrs. Chubb and Son for many banks, both at home and abroad. In its design special care has been paid to the matter of making it as resisting as possible to every known method of attack, particular attention being given to attempts made by the use of the oxy-acetylene blow-pipe and liquid explosives.

One of its principal features is the inclusion of what is called the crane hinge, by means of which the last movement in closing is a direct drive inwards, and as all edges of the door and frame are square, an air- and water-tight fit is thus permanently obtained. The solid thickness of the door is 3in., which includes layers of armour-plate, tough steel, and anti-blowpipe materials.

The lock and bolt work is contained in a very heavy steel chamber, the bolts being controlled by two keyless combination locks,



which are easy to manipulate and offer the greatest known security. These locks are in addition checked by a time-lock, made with four independent chronometer movements, which prevents the door being opened, when once closed, by anyone knowing the combinations on which the locks are set. The time-lock is particularly useful in securing the door for a week-end, when it can be permanently shut for any time up to seventy-two hours.

Another of the principal features of the door is the extremely heavy cast-steel frame, which is built in one solid piece, thus offering a very great rigidity to the whole construction. The outside dimensions of the frame are approximately 8ft. 9in. high by 5ft. 3in. wide, whilst the clear opening inside measures 6ft. 1½in. high by 2ft. 7in. wide.

The whole of the external surface of the door and frame, the edges of the door and frame, and the lockcase mechanism are of polished steel—the crane hinge and pressure blocks are painted a dark grey, and the pressure mechanism plated. Behind the door, for use during the daytime, is an ornamental steel gate, opening inwards.

In the opinion of Messrs. Chubb and Son this door embodies everything that is best in the highest grade of security practice. The total weight of the door and frame is 6½ tons, the cost is £1,347.

The corporation of Swansea have decided to purchase at £3,100 land at Hendrefoilin, Sketty, as a site for a new isolation hospital.

The partnership hitherto subsisting between J. W. Chessum and R. B. Chessum, builders and contractors, at South-place, London, under the style of J. Chessum and Sons, has been dissolved.

PROFESSIONAL AND TRADE SOCIETIES.

DUNDEE INSTITUTE OF ARCHITECTS.—The annual general meeting of the Dundee Institute of Architects has been held in the institute rooms, 43, Nethergate, Dundee, when the following office-bearers were elected for the ensuing session: President, Mr. Charles G. Soutar, Dundee; vice-president, Mr. James Findlay, Dundee; council, Messrs. A. Granger Heiton, Perth; Alexander Symon, Arbroath; G. D. B. Shepherd, Dundee; George Pyott, Dundee; secretary, Mr. William Salmond, 6, High-street, Dundee; treasurer, Mr. David L. Allan, 5, Whitehall-street, Dundee.

ROYAL ACADEMY LECTURES.—Mr. H. H. La Thangue, R.A., in his lectures to the Royal Academy students on Monday and Thursday of this week, took as his topic "Mental Outlook and Colour in Painting." He urged that the mental outlook was the essential thing in art. Without the fine vision, the faculty of seeing the most engaging elements of a subject, technique, however showy or fascinating, was merely tiresome. Fine vision was a faculty which could be acquired, even as the sense of true and beautiful colour could be acquired, and must not be regarded as a pure and incommunicable gift. Fine vision was irrespective of nationality or race, and had nothing to do with the apparent nobility or meanness of the subject. To poor vision were generally due the faults and blunders of paintings. Meanness resulted from failure of a sense of proportion, whereas the aim ought to be to let the insignificant elements give way before the essential. In his concluding lecture, delivered yesterday, Mr. La Thangue defined fine colour as colour which joins fitness with truth. Like fine vision, it was a faculty that could be acquired. Capricious and divergent vision here also could be improved. Painting was, in very deed, an exact study. With fine colour, as with fine vision, came the avoidance of the little and mean things.

THE ACQUISITION OF LAND FOR PUBLIC PURPOSES.—A meeting of the Surveyors' Institution was held on Monday evening, the President, Mr. Howard Chatfield Clarke, occupying the chair. A discussion took place on the papers by Mr. Andrew Young and Mr. L. O. Mathews on the acquisition of land for public purposes read by these Fellows of the Institution at its previous meeting on December 14, and fully reported in our issues of the 18th and 25th ult (pp. 769 and 798, last vol.). Mr. Howard Martin, past-president, held that the keynote of any recommendation for an alteration of the present system should be that the acquisition of land for public purposes should be rendered more easy without depriving private owners of anything lawfully belonging to them. A private Act was still the best and most efficient way of obtaining the powers necessary to enable local authorities to acquire land for public improvements, but Parliamentary proceedings were necessarily costly. He agreed with the suggestions of the Land Committee that Bills for this purpose should be considered by joint committees of Lords and Commons, instead of successively by Committees first of one House and then of the other; that Bills should be carried over from one session to another at the stage which they had reached, and that Committees should have the power to guard against the incurring of excessive costs, whether by promoters or opponents. Public authorities ought not to be allowed to acquire land indiscriminately without disclosing the purpose.—Mr. Harold Griffin thought that public authorities might be authorised to acquire property for specific purposes after a local inquiry by a public department, at which both promoters and opponents could be heard. Mr. Davidson, of Edinburgh, argued that the measure of compensation should be the loss to the seller, and not the value to the buyer. Other speakers also took part in the discussion.

THE ROMANS AS BUILDERS.—In an introductory lecture on "Roman Archi-

itecture," given at the British Museum, Mr. Banister Fletcher, F.R.I.B.A., showed that its devisers changed the face of the civilised world during the centuries when the world-wide Empire of Rome was at the height of its power. The process began with the dominion of one city over other cities, and then came the conquest of distant provinces. The new problem of their government by a Republic in Italy was solved by that system of Imperial domination which made Rome the mistress of the world under a long line of building emperors. This little city in central Italy in some three hundred years established her power in Asia, Africa, and Europe, even as far as England, where Hadrian's wall still indicates one distant limit of the Empire. As in the world of territory so in the world of art, these virile, dominating Romans seized on what they wanted and led it captive behind their Imperial chariot. Thus they took the arch and vault of the Etruscans and the column and beam of the Greeks and welded them together into a Composite style. In spite of a great variety of materials there was nothing adequate to roof over the areas of their huge Imperial buildings, and so they invented concrete for their purpose, and wrought a revolution in building construction. Everywhere Roman architecture was used to register the Imperial idea. Through the Greek temple there breathed the spirit of beauty; from Roman monuments there flashed forth the spirit of power.

COMPETITIONS.

AWARD OF THE ASHPITEL PRIZE, 1914.—On the recommendation of the Board of Architectural Education the Council of the Royal Institute of British Architects have awarded the Ashpitol Prize for 1914 to Mr. George Eric Francis, as "the candidate who has most highly distinguished himself in the examinations held during 1914."

ARCHÆOLOGICAL.

CANTERBURY.—During the last six months, in clearing away the debris from the church of St. Augustine's Monastery, foundations have been revealed under the central tower and in the north aisle of the nave. They have lately been inspected and carefully planned by Sir W. H. St. John Hope, F.S.A., who pronounces them to be of "transcendent interest." They appear to be the remains of a round church about 60ft. in diameter, circular within, and supported on great solid piers of masonry, and octagonal without. Adjoining them in the north aisle appear to be the remains of an apsidal chapel, possibly the porticus of St. Gregory, which was on the north side of the original abbey church of St. Peter and St. Paul, founded by St. Augustine. A good deal more remains to be done in clearing away the surface before a definite statement can be made. The work is, without doubt, pre-Norman, and without existing parallel in England. Sir William St. John Hope is preparing detailed descriptions of the discoveries.

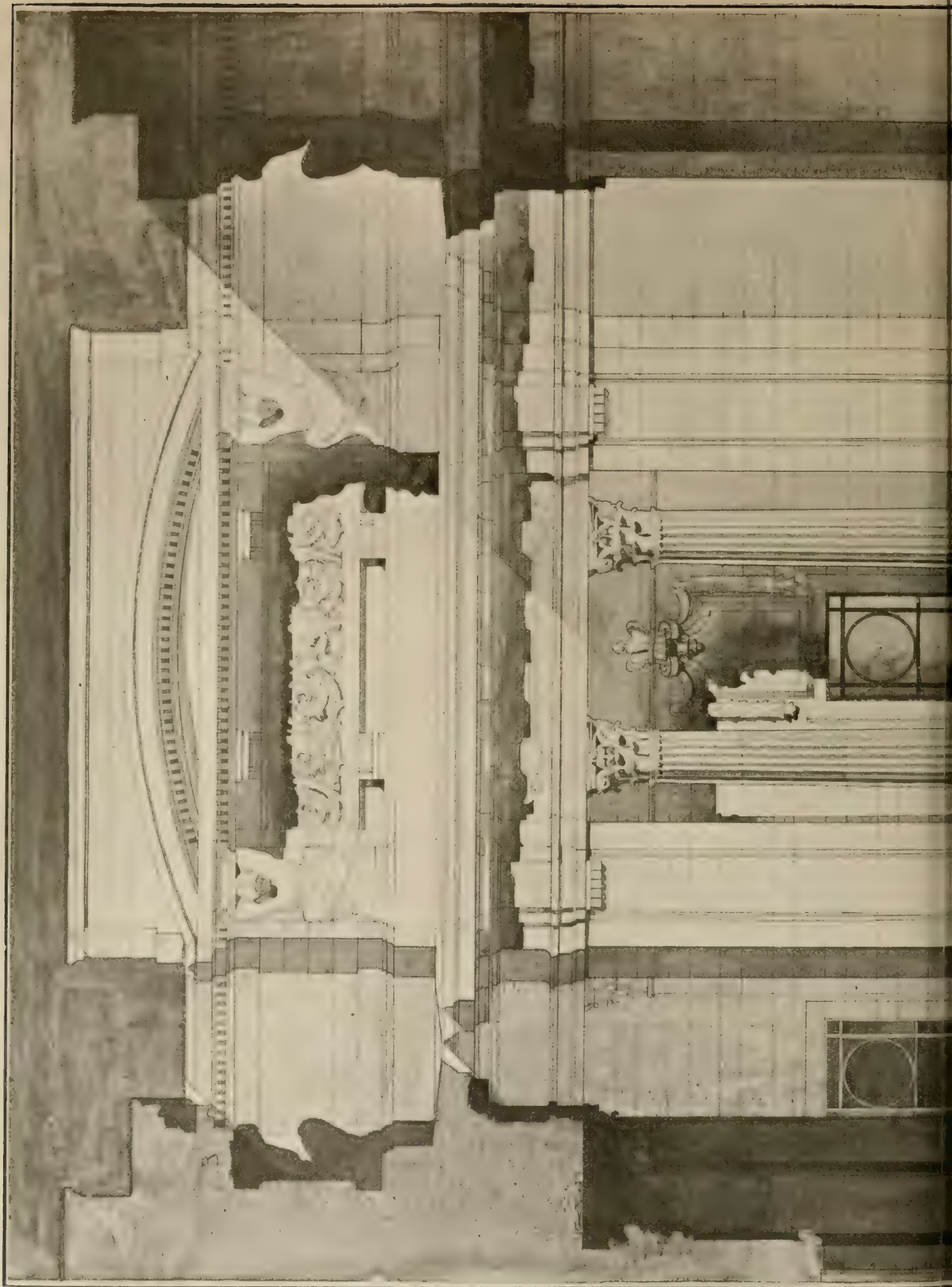
At Prince Rupert, British Columbia, a start is about to be made on the construction of a new courthouse for the Provisional Government. The architect is Mr. A. A. Cox, of Vancouver.

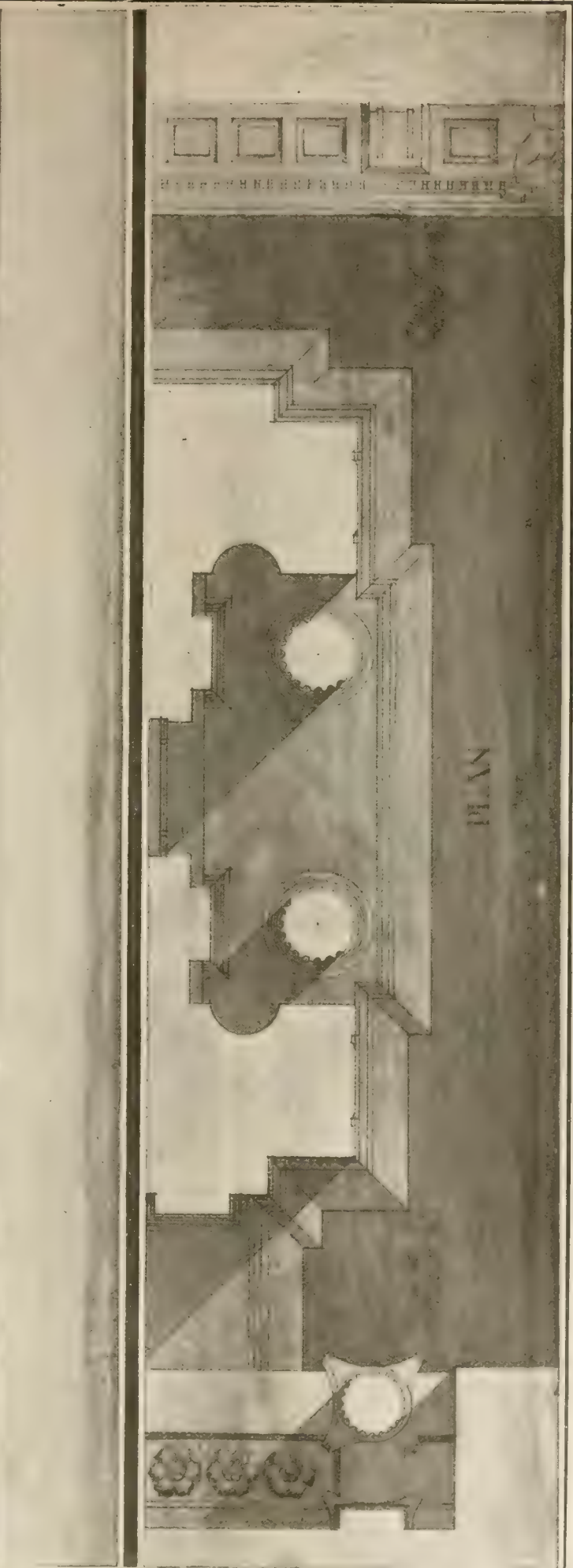
The restoration of the tower of the parish church of Purligh, South-East Essex, has just been completed. Mr. P. M. Beaumont, of Maldon, was the architect, and the works have cost £700.

The parishioners of Kettins Parish Church, Coupar-Angus, have placed a tablet by Sir Robert Lorimer, F.R.I.B.A., Edinburgh, in the exterior of the north wall of the church in memory of the late Rev. James Fleming, D.D., minister of Kettins parish from 1868 to 1913.

Operations on the Derwent dam of the Derwent Valley Water Board are approaching completion. The valves have been closed to store water in the reservoir. The refilling of each wing trench with concrete is practically finished. The openings which carried the river and railway through the dam during construction have been built up.







ROYAL ACADEMY TRAVELLING STUDENTSHIP: DESIGN FOR A PICTURE GALLERY IN A PUBLIC PARK. DETAIL OF THE ENTRANCE FRONT.—By Mr. WILLIAM H. HAMLYN (Winner of the British Institution Scholarship in Architecture of £100, 1913).





"HAVBLEDON," GODALMING, SURREY: GARDEN FRONT.—Mr. ERNEST NEWTON, A.R.A., P.R.I.B.A., Architect.



John Ambler, Photo.

THE ROYAL EXCHANGE, MANCHESTER: ADDITIONS ABOUT TO BE CARRIED OUT.

Messrs. BRADSHAW, GASS, and HOPE, Architects.





AN ORIGINAL STUDY FROM THE NUDE.

By ALFRED STEVENS (Sculptor of the Wellington Monument, St. Paul's Cathedral).

THE SHIPBY AND GILSON GYMNASIUM



MR. ARTHUR STOCKWELL, M.S.A., Architect.

Engineering Notes.

PADDINGTON TO QUEEN'S PARK EXTENSION TUBE.—The extension of the Bakerloo tube railway from Paddington to Queen's Park station, on the London and North-Western system, is approaching completion. It is 2½ miles in length, and consists of independent twin tubes, except at the western end, where the lines emerge to the surface. There are three intermediate stations, at Warwick-avenue, Elgin-avenue (for Maida Vale), and Cambridge-avenue (for Kilburn Park). All the stations are served by escalators. The first contract, for the construction of the tube lines, was carried out by Messrs. Scott and Middleton; and the second contract, for the works in cut-and-cover and in cuttings, has been undertaken by Messrs. John Mowlem and Co., Ltd., of Pimlico.

Building Intelligence.

BRISTOL.—A commencement has been made with the reconstruction of the Cattle Market, next Temple Meads Station, rendered necessary by the acquisition by the Great Western Railway Company of part of the site of the market for purposes of station extension works. The area acquired is about two-thirds of the market, and the buildings which have to be reconstructed include the tavern. The scheme of extension at Temple Meads Station which the Great Western Railway Company have in contemplation is an important one, and will be carried out in sections. A start will soon be made with the first section, which will include the demolition of the large shed on the western side of the station, and the provision on that side of additional carriage-siding accommodation. At the meeting of the Bristol Board of Guardians on Friday is was reported that the estimated cost of the workhouse infirmary at Southmead, now in course of completion, will be £44,000 for the building and £10,000 for engineering works, electric lighting, and machinery. Authority was given to ask for the sanction of the Local Government Board for a further loan of £8,000 for the building. Preliminary plans by Mr. W. S. Skinner, F.R.I.B.A., of College Green, Bristol, for the improvement of the workhouse at Bristol, agreed to in March last, were submitted, and showed provision of a dining hall, kitchen, and stores, the erection of a new laundry in place of the present three separate laundries, the erection of male and female receiving wards, and a chapel. It was, after some discussion, agreed that authority be given for the preparation of the working drawings and of an estimate of the cost of the execution of the works.

PAISLEY.—It has been arranged that the annual exhibition of Paisley Art Institute will inaugurate the new art gallery erected in extension of the old building. In the spring of last year, when the institute were considering a proposal to increase the accommodation at their disposal, the late Mr. Peter Coats undertook to provide the new gallery. He did not live to see the work finished. The ceilings of the new rooms are coved, and the roof-lights are double glazed, the inner panes being of ground glass, so as to secure a satisfactory diffusion of light. An interesting feature is the new entrance to the galleries from the museum, through the sculpture gallery. The dingy stair has been replaced by well-lighted steps, designed as a rotunda, with double Ionic columns and dome. Cloak-room accommodation is also provided.

The Local Government Board have sanctioned the borrowing of £20,422 by the town council of Dewsbury for the provision of eighty-four workmen's houses.

A new highway is to be constructed from Pontymoel to Llantarnam, at an estimated cost of £3,000, to be borne in equal proportions by the Road Board and the district councils of Panteg and Llanfrehfa.

Correspondence.

"UNHEALTHY SCHOOLS."

To the Editor of the BUILDING NEWS.

SIR,—I have read with interest your article on "Unhealthy Schools." The lay and professional minds have long exercised themselves on this problem; but can impracticable methods such as open windows in winter be placed side by side with the more intelligent adaptations of Nature's plan? When artificial systems come under purview it is generally, I observe, because of their failure, rather than their utility. The following is my experience of cross-ventilation. I sent my children to a well-known school in suburban Essex. The school was thoroughly modern in construction, but the one disturbing factor to my mind which raised an anxious query was its open-window system of ventilation. The teacher divided his time between reading the thermometer and instructing the pupils. The windows were open at the top, and in winter the cold air and fog, as the advance guard of an army of physical troubles, soon attacked the children, who became the victims of an open-window system in a classroom where steam-pipes, draught, and fluctuating temperatures, as a consequence, wrought havoc with the children, my own amongst the number, and considerably reduced the attendance at school. A school ventilated on these lines may be a valuable asset to a medical practitioner, but it is the duty of those who have experience of the dangers of such a system to give prominence to them, in the interests of school-children, and this duty has been very sympathetically performed by you, and deserving of the thanks of all parents and the gratitude of the children whose troubles you so earnestly voice. "Health," as Emerson says, "is the first wealth," and we might in this sense mourn over the school-child's physical bankruptcy were the evils of the open-window system in cold weather even less apparent.—I am etc.,

Ilford, Essex.

JOHN LOGAN.

SIR,—I notice, from the correspondence re above, that with cross-ventilation it is necessary for its success that the classrooms be heated to a high temperature. As the scholars would thus be sitting in hot air while being subjected to a draught or douche of cold air from the open windows, it appears that all the conditions obtaining in the Inquisition torture described by you are here in operation, and one can, therefore, judge of what the children must suffer from this arrangement.

I also observe that it is essential to the effective working of this plan that the windows be open at a particular angle. When a biting North-Easter is boisterously hurtling through, I opine that the precise angle at which it enters will not prevent it from tumbling down in icy currents on to the unfortunate children below. A draught is always a draught, no matter at what angle it may enter or strike one: the evil effects are the same.

It is, as you say, well known to sanitarians that such a mode of changing the air is inimical to health, being not only a direct cause of, but a fruitful means of disseminating, disease. Cross-ventilation appears to consist of all that in good practice has hitherto been considered bad in ventilation and to be avoided—viz.: (1) unequal and fluctuating temperatures, caused, with cross-ventilation, by the irregular and, at times, violent displacement of the warmed air by the excessive volumes and the velocity of entry of cold air through open windows; (2) draughts of cold air; (3) through draughts between open windows on different sides of a room (this is the most insidious and dangerous form of draught); (4) rebreathal of expired air returned by descending currents. With cross-ventilation the evils enumerated are what we are asked by its advocates to accept as the only "perfect" plan and infallible panacea for all our ills, so far as fresh air is concerned.

It occurs to me that the explanation for this may be found in the extract contained in "R. G. B.'s" letter from the paper on ventilation recently read at London University College, referring to the failure of artificial hot-air systems with hermetically-closed windows, and that the resort by certain school committees to open windows, pure and simple, is the rebound resulting therefrom. Extremes in ventilation, as in everything else, should, however, be avoided, as they, more often than not, defeat their object, which, in this case, I take it, is the health and comfort of the school-children.

There cannot, of course, be any great objection to window ventilation within reasonable limits in temperate weather; but in the winter to rely solely upon that means is a mistake, and one involving very serious consequences indeed.

The question is one that seems at present to be commanding some considerable attention, and I understand that measures are being taken to bring it before the House of Commons, with a view to securing the appointment of a Royal Commission, which I think, with you, would strengthen the hands of the Board of Education in dealing effectively with the matter, which is one of national importance.—I am, etc.,

C. E.

SIR,—The timely article in your issue of December 4 on this important subject merits the earnest attention of all parties interested in the erection and maintenance of school buildings, and the causes of this unhealthy condition should be thoroughly analysed, with a view to amendment.

On one subject—the extreme danger of draughts—everyone must agree, and many people can speak from bitter experience. How this can be avoided, and yet keep the atmosphere of a schoolroom in a breathable condition, has proved to be a complex problem, and as the conditions of no two buildings are exactly alike, the difficulty of applying any system of mechanical extraction, all of which are easily affected by variations of temperature and changes in the direction of the wind, will be at once apparent.

The fact that so many systems have been tried and failed, and that in most cases the designers of schools have fallen back on the open window, would lead to the assumption that the window is the last resort, and with this view it becomes most important to find out whether the window cannot be made to answer the purpose.

Before going into details let us consider first principles, and take the condition of the air in any room previous to occupation. It will be more or less pure and invigorating, according to the district in which the school is located. If a number of children, more or less clean, are assembled, and all apertures closed, the air would soon become poisonous; it is necessary, therefore, to keep a continual change of atmosphere by means of circulation, which can only be accomplished by the admission of fresh air from outside the building.

In paragraph 3 of the article it states: "The evil is accentuated owing to the through-draught created by cross-currents. . . . As the descending current of cold air cools and pressed down the warmer ascending air . . . to be rebreathed." Is this the case? For every cubic inch of air brought into the room a like quantity must be expelled. If there are only two openings in a room one will act as an inlet and the other as an outlet. It is well known that cold air and warm air will not mix any more readily than cold and hot water; there must be either movement or time to allow of assimilation.

If the cold air is admitted through the window in an upward direction it will rise to an extent varying with the velocity of entry, and then, by gravitation, begin to fall, becoming gradually warmer in the process; but by the fact of entry it has expelled the same quantity of the heated and vitiated atmosphere, and not pressed it down to be breathed again.

This constant change of air, which must be

capable of regulation, to meet varying requirements, will keep the atmosphere in almost as pure a condition as when the room was unoccupied.

In an able paper contributed by Dr. Goodchild to the "Public Health Journal," published in Toronto in January, 1913, on the subject of "The Open Window," he gives a notable instance of the failure by roof extraction, in which it is proved that the outlet tubes were thickly coated with dust, harbouring most detrimental germs, and that under certain conditions the intended action of these tubes was reversed, and the germs were pumped into the rooms, with disastrous results.

In paragraph 6 you suggest that the ventilation of the schools should be left to the architect. In paragraph 17 you quote Parkes: "Ventilation is a science, and it requires the study of a lifetime to master properly its intricacies." All sorts of architects, old and young, build schools; many of them have not had the opportunity or the time to study ventilation, and some prefer to leave this question to the experts. How frequently experts fail is evidenced by such buildings as the Law Courts, the Houses of Parliament, and many others on which enormous sums of money have been spent on acknowledged failures.

When considering the best arrangements to adopt it may be wise, in the first instance, to decide what should be avoided; probably the greatest sinners in the production of draughts are every form of casement-window opening vertically; these cause a rush of air in such a position that it is, practically, impossible for anyone in the room to avoid a draught. A double-hung sash, slightly opened at the top, or a fanlight opening inwards as a hopper, close to the ceiling, are productive sources of draughts in the form referred to in paragraph 7 of your article as the douche.

After careful consideration of the means available, we cannot avoid returning to the window—it is the cheapest, the easiest to manipulate, and, if properly worked, the most efficient. But you must have the right form of window to give, when open, an upward direction to the incoming air, well above the heads of the occupants; one which is easy to regulate and control, which is not costly, and will not get out of order.—I am, etc.,

Manchester.

C. H. S.

WATER SUPPLY AND SANITARY MATTERS.

BIRKENHEAD: THE WELSH WATER SUPPLY. At the last meeting of the corporation of Birkenhead, Alderman Bloor, chairman of the water committee, submitted a number of tenders for acceptance for the construction of the aqueduct in connection with the Alwen water scheme. It was proposed to install a plant capable of filtering 7.2 million gallons a day; but in the first instance plant sufficient for filtering two million gallons a day would be installed. The cost was estimated at £35,400. With the letting of this and contracts for cast-iron pipes, the Alwen portion of the scheme would be complete. The engineers' revised estimate of the cost of the aqueduct and balancing-tanks amounted to £412,000, and the tenders recommended for acceptance, including the contract for the portion of the aqueduct between Playbrick Hall and Connah's Quay, amounted to £427,084, or 3.6 per cent. in excess of the revised estimate. Mr. Willmer criticised the action of the committee in not making public information regarding the different amounts of the tenderers. In regard to two tenders, he wished to know if they were the lowest submitted. The chairman, after consulting with the town clerk, refused to divulge the figures, as he said it would be unfair to all parties concerned. He was prepared to give facilities for members to inspect the engineers' report and other papers. The council agreed to the acceptance of the tenders.

Messrs. Patman and Fotheringham, Ltd., 100 and 102, Theobald's-road, London, W.C., and Park-street, Islington, have been successful in securing the contract for rebuilding No. 2, Royal Exchange-avenue, and Nos. 19, 20, and 21, Finch-lane, E.C., for the British Dominions General Insurance Co., Ltd. Mr. A. H. Moore, A.R.I.B.A., is the architect.

LEGAL INTELLIGENCE.

PLANS FOR A PICTURE-HOUSE.—At the Birmingham County-court, on Friday, before Judge Amphlett, K.C., and a jury, the hearing was resumed of the action in which Thomas Silver, architect, of Soho-hill, Handsworth, sought to recover the sum of £100 from Alfred Smallwood, manufacturer, Holyhead-road, Handsworth, for work done and services rendered. Mr. Cave appeared for the plaintiff, and Mr. Maddocks represented the defendant. The plaintiff's case was concluded on the previous Wednesday. The jury awarded him £60, and judgment was entered accordingly.

BUILDING BY-LAWS AT LLANDUDNO.—At the Carnarvonshire Quarter Sessions, on Friday, Messrs. W. S. Williams and Son, drapers, Llandudno, appealed against a conviction for permitting premises to be used as a dwelling-house contrary to the Public Health Act. The appellants were the owners of a drapery establishment in Mostyn-street, Llandudno. The premises originally consisted of a shop in Mostyn-street and two cottages in the rear; but, as the result of repeated alterations, the two cottages had been taken in as part of the premises, an undertaking being given that the cottages would only be used as premises of the warehouse class. The council's case was that the appellants covered over the ground floor between the premises, and permitted some of their assistants to sleep in the cottages, and that the open space between them and the main premises had been thereby so reduced as to be insufficient to comply with the by-laws. The notice of the council to discontinue the use of the premises in the way stated was disregarded, whereupon proceedings followed, and a fine was imposed in October last.—Mr. W. T. Ward, engineer to the Llandudno Council, said that there was a suggestion made by the appellants that a flat roof would provide the necessary open space; but that was not so, and had never been recognised by the council. Witness reported to the council in 1905 that the cottages were being used for sleeping purposes. There was, however, nothing in the sanitary condition of the premises that could be complained of.—Mr. W. Little, sanitary inspector to the Llandudno Council, reported upon several visits which he paid to the appellants' premises when he found young employees sleeping there. There were no complaints on account of either overcrowding or insanitary conditions.—Mr. Lomax, engineer (Manchester), gave evidence for the appellants, illustrating his points by means of a large model of the premises. He explained that the alterations consisted of roofing over the ground floor intervening between the front premises and the cottages, and as long as this space was sufficient there could be no objection. The ventilation and circulation of air were excellent.—Evidence of a corroborative character was tendered on behalf of appellants by other witnesses.—Mr. Johnson, for appellants, submitted that all that the appellants had done was to drive their business premises over the ground floor to the cottages. They interfered in no way with the superstructure of the cottages, and the undertaking which they gave to the council applied only to the portion which connected the main with the back premises, and which had never been used except for business purposes.—The appeal was dismissed.

At a general meeting of the Royal Society of British Artists, Mr. Hely Smith has been elected honorary treasurer, and Mr. Francis Black, A.R.C.A., honorary secretary.

The urban district council of Wadebridge have appointed Mr. Geach as surveyor, and Mr. J. Bale as sanitary inspector, in the absence of Mr. R. W. Burr, now on military duties.

Hayes Urban District Council have under consideration a scheme for erecting 208 houses at a total cost of £47,000. Ten different types of dwellings are proposed, with rents ranging from 10s. to 6s. 6d.

The new choir-vestry now being added to the church of St. Bartholomew-the-Great, from Sir Aston Webb's designs, will be opened by the Bishop of London on Wednesday, June 9. Sir Aston Webb is acting as hon. architect in connection with the alterations to be carried out at the church schools to meet the requirements of the Board of Education.

The Scottish Board of Agriculture have issued a memorandum as to the utilisation of home-grown timber, and specifying War Office requirements of manufactured articles; also leaflets dealing with the buying and selling of timber on entailed estates, death duties on timber and woodlands, the production of potash salts from woodlands and waste lands, and the large larch sawfly.

Our Office Table.

At the meeting on Monday of the corporation of Plymouth a long discussion took place on the recommendations of the lunatic asylums visiting committee: (1) That it is desirable to extend the asylum to provide accommodation for 400 additional patients. (2) That Messrs. Thornely and Rooke, architects, of Plymouth, be instructed to prepare designs for the extension of the asylum on the terms laid down by the Society of Architects. "It was stated that it was proposed to extend the asylum at Blackadown by two wings, thus increasing the accommodation from 400 to 840 beds. The existing asylum was built at a cost of £180 per bed, and the estimated expenditure was £250 a bed, possibly reducible to £230 a bed, should the war come to an end, or, say, £110,000. It would be at least fifteen months before the committee could invite tenders, and three years before patients could be received into the new wings. Eventually an amendment, instructing the asylum committee to prepare a detailed statement of the financial effect of the recommendations, was carried by 29 votes to 25.

Canon Alexander, treasurer of St. Paul's Cathedral, announced on Saturday that the work of protecting the fabric from fire risks, which has occupied between two and three years, and as cost upwards of £5,000, is now completed. "St. Paul's was always regarded," Canon Alexander remarked, "as a dangerous building in regard to fire. The scheme is twofold in character. There is the preventive part, which is quite as important as that for dealing with an outbreak, and in this direction all the woodwork which it has been possible to remove has been removed, and iron substituted. For instance, in the clock tower, which was open and into which fire from a big building near could easily have blown, all the woodwork had been taken away, iron ladders being substituted for the wooden ones. Then there is the scheme for meeting the possibility of a fire. We have had installed a system of fire mains and hydrants, accompanied by special apparatus for forcing water to a great height. The water is carried right up to the top of the building, so that if a fire should occur on any level there will be a sufficiency of water to deal with it. Prior to this it would have been impossible to deal with a fire at the top of the Cathedral because of the height."

As illustrated and described in our issue of June 19, 1914, pp. 840-3, the work of restoring and strengthening the roof of Westminster Hall by means of steel trusses is about to begin. The recommendation of Mr. Frank Baines, M.V.O., of H.M. Office of Works, that the roof should be reinforced rather than renewed, was accepted by Earl Beauchamp, the First Commissioner of Works, after having been submitted to him by the Ancient Monuments Board. Mr. Baines's scheme is the construction of a complete steel truss for the roof, so that the existing timbers may be preserved as they stand, or patched and repaired with modern oak where they are decayed. The stone slabs of the floor of the Hall are being taken up, and a timber rail base laid down for carrying the steel scaffolding, which will weigh 180 tons, apart from the superimposed load of the trusses. A false temporary roof is being raised over the existing roof over the Hall, from which all the slates will have to be stripped off.

On Monday the Thames Conservancy expressed provisional acquiescence with the plans for three new bridges across the Thames. One of these will be constructed across the river between Goring and Streatley. Plans were originally prepared two years ago, but had to be abandoned because it was found impracticable to construct such a bridge with approaches having a reasonable gradient to suit the structure. Consequently another plan has been prepared, providing for a trestled structure somewhat similar to the present bridge, but

to be constructed in reinforced concrete. This design has been made the basis of the plan which is now deposited. The Conservancy suggested a modification in the design, with the object of increasing the width of the waterway for navigation purposes. The other two bridges are to be built by the Reading Corporation over the river between Reading and Caversham. The first to be built will be the De Bohun-road Bridge, which will be of reinforced concrete with a stone parapet. The design provides for a bridge of single span with a width of 180ft., and a maximum rise of 18ft. above the normal level of the water.

The Manchester parks committee are steadily adding to the number of districts and thoroughfares in which they are planting trees and generally improving the scanty stock of foliage in the city. In all nearly 4,500 trees have been planted in the outlying districts, particularly on the south side of the city, and so successful have been the results that the inner and eastern parts of Manchester are now the scene of experiments. Tree-cultivation is being attempted in Clopton-street, Hulme, and Grey Mare-lane, Openshaw, and probably other parts of Hulme and Moss Side and Higher Openshaw will follow. The selection of trees varies a little according to the district; but it has been found that poplars, thorns, willows, and the common ash last the longest. Among shrubs certain varieties of the rhododendron, honeysuckle, golden elvers, privets, and box stand smoke and chemical vapours best. The cost of the tree and shrub provision in Manchester streets amount to about £3,000 a year.

At the last meeting of the town council of Rochdale, Mr. Thomas, chairman of the health committee, stated that the £17,000 or £18,000 spent by property owners and the corporation (in the proportion of two-thirds to one-third respectively) on conversion of pail-closets to water-closets has been accompanied by a general improvement of the property concerned, to the great benefit of the tenants. He indicated also some of the difficulties of housing reform. Even such a simple measure as the breaking through of "back-to-backs" into "through" houses has unhoused some fifty families, who have not been able to find fresh dwellings, but have been crowded into houses let in lodgings, or into lodging-houses, or who else have joined with another family in one house. But in dealing with "semi-back-to-backs" (a very large class, numbering in Dr. Anderson's last return 1,120 cases) this result has not, so far, followed, and in hastening on the work of improvement the policy of the health committee has been to secure "sanitary conversion" at the same time, so that a very real gain to the housing accommodation of the borough is slowly being achieved by the conservative, but steadily applied, methods of the health committee.

In his annual report to the Kent County Council, Dr. A. Greenwood, the medical officer of health, remarks: "The value of the Housing and Town-Planning Act, particularly that portion which deals with the inspection of houses, is more evident as systematic work of the nature set out in the regulations framed by the Local Government Board proceeds, and housing accommodation is steadily improving. . . . No fewer than 10,187 houses have been inspected under the Act in urban districts, and 6,896 in rural, both being considerable increases as compared with the previous year. Six hundred and twenty-two houses (471 urban and 151 rural) were considered to be unfit for human habitation, and 561 closing orders (491 urban and 70 rural) were made. In the latter cases, 193 premises (153 urban and 40 rural) were afterwards made habitable. In 8,573 premises (6,151 urban and 2,422 rural), the defects were remedied without the making of closing orders. It will be seen that houses which presented defects constituted a large proportion of these inspected. There is considerable variation in the amount of work done in the different districts."

A record of work done by the surveyor's department of the Lincoln Corporation

during the past year is furnished by Mr. R. A. MacBrair, the city surveyor. Plans have been passed for three new streets, five public buildings, 186 houses, forty additions to houses and sundry buildings, and six ware-houses and workshops, a total of 240, as against 251 last year, and about 170 houses have been erected and occupied. The Northern Hospital on Wragby-road has been built. Of the public works carried out the most important is the refuse destructor, built adjoining the sewage pumping station, so as to utilise the steam in pumping the sewage to the farm. The Wickham Gardens have been formed on the land round the water tower in Westgate, including the site of the corporation stables built some dozen years ago. At the Monks-road recreation ground a bowling-green has been made. The old water filter-beds at Boultham have been turned into bathing places. The old St. Swithin's burial ground, at the corner of Rosemary-lane and Croft-street, has been converted into a small ornamental garden. St. John's old burial ground at the corner of Newport and Church-lane has been similarly dealt with. The administrative block at the City Infectious Diseases Hospital on Long Leys-road has been enlarged. A pavilion erected, and the building of the John Dawson Sanatorium is drawing to a completion. Many street improvements have been carried out, and the length of the river wall on Waterside-south having given signs of tilting over into the river, the Great Northern Railway Company have rebuilt and raised it, at the city's expense.

The Engineering Standards Committee have revised and reissued the lists of British standard rolled sections. As regards the modifications, four unequal angles, three bulb angles, and two zed bars have been added to the lists, all of which are in demand primarily for shipbuilding purposes. It has not been found practicable to delete more than one standard section from the lists, as those sizes which are not now required for shipbuilding are considered essential for bridge and underframe work. Certain reductions have also been made in the minimum web thicknesses of the bulb angles and channels, with a view of producing more economical forms of sections. The lists can be obtained of Messrs. Crosby Lockwood and Son, 7, Stationers' Hall-court, E.C.

During the months of October, November, and December, 1914, the Road Board indicated additional advances to highway authorities amounting in the aggregate to £170,935, of which £132,843 was by way of grant, and £38,092 by way of loan. The advances made and indicated up to Dec. 31, less indications cancelled, amounted to £5,954,304. Of this total, £4,508,585 was by way of grant, and £1,445,719 by way of loan. The formal grants completed during the last quarter, amounting to £337,939, were applied as follows: Road crust improvements, £219,774; road widenings and improvement of curves and corners, £80,994; road diversions, £6,134; reconstruction and improvement of bridges, £4,620; and new roads and bridges, £26,467.

At a special meeting of the Cricklath Town Council on Tuesday night a letter was read from the Local Government Board sanctioning the application of the council to borrow the sum of £3,294 for the purpose of erecting seventeen workmen's dwellings, subject to some modifications suggested by the Board.

According to the Bill to be introduced next session by the Metropolitan Water Board, powers are sought to raise money by the issue of bonds of from £1,000,000 to £2,000,000. Parliament will also be asked to authorise the Board to borrow £682,500 for the construction of reservoirs, tunnels, aqueducts, and machinery necessary to carry out the work. Among the works for which authority is sought are the construction of reservoirs in Southgate, Eltham, Bromley (Kent), Farnborough, and Shoreham; a well is to be sunk and a pumping station erected at Eynsford, a subway or tunnel will be run under Dog Kennel-hill and Grove-lane, Camberwell; while provision has been made for many miles of aqueducts across East Molesey, Thames Ditton, New Malden, Merton, and Mitcham.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Royal Academy. "Stepping Stones," by W. L. Wyllie, R.A. 4 p.m.
Victoria and Albert Museum. "The Evolution of English Gothic Cathedrals," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.
Royal Institute of British Architects. "The Ecclesiastical Buildings of North Italy," by F. C. Eden 8 p.m.
Royal Society of Arts. "On the Production and Manufacture," Cantor Lecture No. 1, by Dr. F. Mollwo Perkins 8 p.m.

WEDNESDAY.—Royal Academy. "Stepping Stones," by W. L. Wyllie, R.A. 4 p.m.
Royal Society of Arts. "The Textile Industries of Great Britain and of Germany," by J. A. Hunter. 8 p.m.

THURSDAY.—British Museum. "The Temples and Basilicas of Rome," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.
Royal Society of Arts. "Nepal," by H. J. Elwes, F.R.S. 4.30 p.m.

The peal of bells in the famous steeple of Boston Church, Lincolnshire, have been rung for the first time for eight months. In April it was reported that a crack in the tower had been discovered. Mr. W. S. Weatherley, architect, was consulted, and, on his advice, "tell-tales" were affixed over the aperture, and the ringing of the bells was suspended, so that there might be no unnatural vibration. The test has proved that there is no need for alarm with respect to the condition of the tower.

The Secretary of the War Office announces that, owing to the very great number of offers of assistance and applications for employment received from civil and mechanical engineers, architects, and surveyors, it has been found impossible to acknowledge letters individually. Should an opportunity arise for utilising the services of any of the applicants, they will be communicated with; but the number of applications received far exceeds the probable requirements.

The Local Government Board have given authority for the preparation of eleven further town-planning schemes under the Housing and Town Planning Act, 1909. The schemes are authorised to be prepared by the corporations of Birkenhead, Leeds (two schemes), Lincoln, Manchester, Rochdale, Southend-on-Sea, and Wallsend, and the urban district councils of Esher and the Dittons, Grays Thurrock, and Neston and Parkgate, and relate to areas of about 166, 2,278, 895, 207, 5,269, 1,576, 268, 1,105, 1,643, 2,374, and 3,258 acres respectively.

Mr. Lewis Harcourt, M.P., Secretary for the Colonies, formally opened on Wednesday the new London offices of the Agent-General for Western Australia. The building is at the corner of the Strand and Savoy-street, and was formerly occupied by a seller of engravings and paintings. The lower part of the front has been faced with black Belgian marble, a white panel over the entrance being inlaid with the Black Swan of Western Australia, illuminated at night. The entrance-hall runs the depth of the building, about 66ft., and from this the emigration offices are reached. The administrative offices occupy the upper floors.

At a meeting of the Wednesbury Town Council the other day, the mayor proposed the adoption of a recommendation of the general purposes committee, that, in view of the existence of overcrowding in the borough, and the failure of private enterprise to provide artisans' dwellings, application be made to the Local Government Board for sanction to the borrowing of £5,240 for the provision of twenty-four dwellings under Part III. of the Housing of the Working Classes Act, 1890. The committee also asked the council to sanction the purchase for £600 of about 9,920 square yards of land in Hobs Hole-road, and to approve a contract for the erection thereon of twenty-four dwellings for the sum of £4,320. The recommendations were unanimously adopted.

An inquest was held at Batley on Tuesday on Joseph Henry Battye, aged fifty-one, a master plumber, of Batley. Dr. W. H. H. Bennett deposed that Mr. Battye showed him a small wound on the front of the right wrist, and the doctor advised him to be careful. He gave him some antiseptic poulticing, and next day told him he must rest it. Battye, however, went on working until he could not use the hand. Eventually it was found necessary to amputate the arm just below the elbow; but death followed the operation. The jury returned a verdict to the effect that death resulted from blood-poisoning set up by an accidental wound to the right wrist, which became septic, and which was probably aggravated by the man continuing to work after it was first noticed.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us. Timber quotations we omit altogether, as published figures differ so widely that they are, we fear, in many cases quite unreliable.

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£7 10 0 to	£8 0 0
Wrought-Iron Girder Plates	7 15 0	10 0 0
Steel Girder Plates	8 0 0	9 0 0
Bar Iron, good Staffs	6 5 0	8 10 0
Do., Lowmoor, Flat, Round, or Square	22 0 0	0 0 0
Do., Welsh	5 15 0	5 17 0
Boiler Plates, Iron—		
South Staffs	8 0 0	8 15 0
Best Smedshill	9 0 0	9 10 0
Angles 10s., Tees 20s. per ton extra.		
Builders' Hoop Iron, for bonding, &c., £8 15s. to £9.		
Ditto galvanised, £14 to £15 10s. per ton.		
Galvanised Corrugated Sheet Iron—		
No. 18 to 20. No. 22 to 24		
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—											
3 to 7	8	9	10	11	12	13	14	15	B.W.G.		
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.		

	Per ton.	Per ton.
Cast-Iron Columns	£6 17 6 to	£8 10 0
Cast-Iron Stanchions	6 17 6	8 10 0
Rolled-Iron Fencing Wire	8 5 0	8 10 0
Rolled-Steel Fencing Wire	7 5 0	7 10 0
Galvanised	8 15 0	9 5 0
Cast-Iron Sash Weights	5 10 0	5 15 0
Cut Floor Brads	10 15 0	—
Corrugated Iron, 24 gauge	16 0 0	—
Galvanised Wire Strand, 7 ply.		
14 B.W.G.	14 5 0	—

B.B. Drawn Telegraph Wire, Galvanised—					
0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 10s.	per ton.

Cast-Iron Socket Pipes—	
3in. diameter	£6 15 0 to £7 2 6
4in. to 6in.	6 10 0 to 6 12 6
7in. to 24in. (all sizes)	6 17 6 to 7 2 6

[Coated with composition, 5s. 0d. per ton extra. turned and bored joints 5s. per ton extra.]

Fig Iron—	
	Per ton.
Cold Blast, Lillieshall	80s. 0d. to 127s. 6d.
Hot Blast, ditto	87s. 0d. to 97s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—	
Gas-Tubes	72½ p.c.
Water-Tubes	66½
Steam-Tubes	65
Galvanised Gas-Tubes	60
Galvanised Water-Tubes	56½
Galvanised Steam-Tubes	50

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	£23 15 0 to	—
Country	24 15 0	—
Lead Barrel Pipe, Town	24 15 0	—
Country	25 15 0	—
Lead Pipe, Tinned inside, Town	25 15 0	—
Country	26 15 0	—
Lead Pipe, Tinned inside and outside	28 5 0	—
Town	29 5 0	—
Country	29 5 0	—
Composition Gas-Pipe, Town	26 15 0	—
Country	27 15 0	—
Lead Soil-pipe (up to 4in.) Town	26 15 0	—
Country	27 15 0	—
[Over 4in. £1 per ton extra.]		
Lead, Common Brands	17 17 6	£18 12 6
Lead Shot, in 28lb. bags	24 15 0	—
Copper Sheets, sheathing & rods	75 0 0	78 10 0
Copper, British Cast and Ingot	61 15 0	62 5 0
Tin, English Ingots	154 0 0	155 0 0
Do., Bars	155 0 0	156 0 0
Pig Lead, in 10wt. Pigs (Town)	19 2 6	19 10 0
Sheet Lead, Town	23 5 0	—
Country	24 5 0	—
Genuine White Lead	20 15 0	—
Refined Red Lead	20 0 0	—
Sheet Zinc	55 0 0	—
Old Lead, against account	17 15 0	—
Tin	8 15 0	—
Cut nails (per cwt. basis, ordinary brand)	0 12 9	—

* For 5 cwt. lots and upwards.

SLATES.

	in.	4 s. d.	per 1,000 of
Blue Portmadoc	20 × 10	12 12 6	1,200 at r. stn.
"	16 × 8	6 12 6	"
Blue Bangor	20 × 10	13 2 6	"
"	20 × 12	13 17 6	"
First quality	20 × 10	13 0 0	"
"	20 × 12	13 15 0	"
"	16 × 8	7 5 0	"
Eureka unfading green	20 × 10	15 17 6	"
"	20 × 12	18 7 6	"
"	18 × 10	13 5 0	"
"	16 × 8	10 5 0	"
Permanent Green	20 × 10	11 12 6	"
"	18 × 10	9 12 6	"
"	16 × 8	6 12 6	"

BRICKS.

(All prices net.)

First Hard Stocks	£1 15 0	per 1,000	alongside, in
Second Hard Stocks	1 11 0	"	" driver.
Mild Stocks	1 9 0	"	"
Picked Stocks for			" delivered
Facings	2 5 0	"	at rly. stn.
Flettons	1 14 0	"	"
Pressed Wire Cuts	1 18 0	"	"
Red Wire Cuts	1 14 0	"	"
Best Fareham Red	3 12 0	"	"
Best Red Pressed			"
Rnabon Facing	5 0 0	"	"
Best Blue Pressed			"
Staffordshire	3 15 0	"	"
Ditto Bullnose	4 0 0	"	"
Best Stourbridge			"
Firebricks	4 0 0	"	"
2½ in. Best Red Ac-			"
cringing Plastic	4 10 6	"	"
Facing Bricks			"
3½ in. Accrington Best Red Plastic Facing per 1,000			"
Bricks	£2 10 0		"
3½ in. ditto Second Best Plastic ditto	2 2 6		"
Ditto Ordinary Secondary Bricks	1 11 3		"
Ditto Plastic Engineering Bricks	1 17 6		"
Sewer Arch Brick not more than 3½ in. thick part	2 0 0		"
3½ in. Chimney Bricks fit for outside work	2 6 0		"
3½ in. ditto ditto through and through	2 0 0		"
3½ in. Beaded, Ovolo and Bevel Jamb; Octagons; 2½" and 1½" radius Bullnoses; Stock patterns	3 7 6		"
Accrington Air Bricks, 9" × 2 course deep, each 0 0 6			"
Ditto ditto 9" × 1 course	0 0 3		"

Accrington Camber Arches:—	
3 course deep, 4½" soffit, per foot opening...	0 1 3
4 ditto 4½" ditto ditto ditto	0 1 8
5 ditto 4½" ditto ditto ditto	0 2 1
6 ditto 4½" ditto ditto ditto	0 2 6
3 ditto 9" ditto ditto ditto	0 2 1
4 ditto 9" ditto ditto ditto	0 2 11
5 ditto 9" ditto ditto ditto	0 3 6
6 ditto 9" ditto ditto ditto	0 4 6

Net free on rail, or free on boat at works.

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

White, Ivory, and	Best.	Second.
Salt Glazed.	Buff, Cream, Other	Second
Best.	Second.	Colours.
Stretchers—		
£12 7 6	£10 17 6	£13 17 6
£11 7 6	10 7 6	13 7 6
11 17 6	10 7 6	17 7 6
Quoins, Bullnose, and 4½ in. Flats—		
15 17 6	14 17 6	17 17 6
Double Stretchers—		
17 17 6	16 7 6	20 17 6
Double Headers—		
14 17 6	13 7 6	17 17 6
One side and two ends, square—		
18 17 6	17 17 6	21 17 6
Two sides and one end, square—		
19 17 6	18 7 6	22 17 6
Splines and Squints—		
17 7 6	15 7 6	21 17 6
Plinth and Hollow Bricks, Stretchers and Headers—		
5d. each 4d. each 6d. each 6d. each 5d. each		
Double Bullnose, Round Ends, Bullnose Stops—		
5d. each 4d. each 6d. each 6d. each 5d. each		
Rounded Internal Angles—		
4d. each 3d. each 5d. each 5d. each 4d. each		

MOULDED BRICKS.

Stretchers and Headers—	
8d. each	8d. each
Internal and External Angles—	
1/3 each	1/2 each
1/2 each	1/3 each
Sill Bullnose, Stretchers, and Headers—	
5d. each 4d. each 6d. each 6d. each	5d. each
Majolica or Soft Glazed Stretchers and Headers	Per 1,000
"	£22 17 6
"	27 17 6
Compass bricks, circular and arch bricks	Not
of single radius 48 per 1,000 over above	exceed-
list for their respective kinds and colours	ing 9in.
Camber arch bricks, any kind or colour,	by 4½ in.
1s. 2d. each	by 2½ in.
Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.	

* These prices are carriage paid in full truck loads to London Stations.	
	s. d.
Thames Sand	7 6 per yard, delivered
Pit Sand	7 0
Thames Ballast	6 0
Best Portland Cement	36 0 to 41 0 delivered
Ground Blue Lias Lime	21 0 per ton delivered

Exclusive of charge for sacks.

Grey Stone Lime	
s. d.	s. d. Per yard,
13 6 to 14 0	delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.	

STONE.*

Red Mansfield, in blocks	per foot cube	£0 2 4
Darley Dale, ditto	"	0 2 3
Red Corsehill, ditto	"	0 2 2
Clooseburn Red Freestone, ditto	"	0 2 0
Ancaster, ditto	"	1 10
Greenshill, ditto	"	0 1 10
Reer, ditto	"	0 1 6
Chilmark, ditto (in truck at Nine Elms)	"	0 1 10½
Hard York, ditto	"	0 2 0
Do. do. 6in. sawn both sides, landings, random sizes	per foot sup.	0 2 8
Do. do. 3in. slab sawn two sides, random sizes	"	0 1 3

* All F.O.R. London.

Bath Stone, delivered on road	£ s. d.
waggons, Paddington Depot per foot cube	0 1 7½
Ditto, ditto, Nine Elms Depot	" 0 1 9½
Beer Stone, delivered on rail	" 0 1 1
at Seaton Station	" 0 1 1
Ditto, delivered at Nine Elms Station	" 0 1 7½
Portland Stone, in random blocks of 20ft. average:—	
Delivered on road waggons	Brown White
at Paddington Depot,	Whit Bed. Base Bed.
Nine Elms Depot, or	Per foot cube.
Pimlico Wharf	£0 2 3 £0 2 4½

TILES.

	s. d.	Delvd. at
Plain red roofing tiles	42 0	per 1000 ry. sn.
Hip and Valley tiles	3 7	per doz.
Broseley tiles	50 0	per 1000
Ornamental tiles	52 8	"
Hip and Valley tiles	4 0	per doz.
Rnabon red, brown, or brindled ditto (Edwards)	57 6	per 1000
Ornamental ditto	60 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 0	"
Selected "Perfecta" roofing tiles: Plain tiles (Peake's)	46 0	per 1000
Ornamental ditto	48 6	"
Hip tiles	3 10½	per doz.
Valley tiles	3 4½	"
"Rosemary" brand plain tiles	48 0	per 1000
Ornamental tiles	50 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 8	"
Staffordshire (Hanley) Reds or brindled tiles	42 6	per 1000
Hand-made sand-faced	45 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"
Hartshill "brand plain tiles, sand-faced	45 0	per 1000
Pressed	42 6	"
Ornamental ditto	47 6	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"

OILS.

Rapeseed, English pale, per tun	£28 15 0 to £29 5 0
Ditto, brown	26 15 0
Cottonseed, refined	29 0 0
Olive, Spanish	39 10 0
Seal, pale	21 0 0
Cocunut, Cochín	46 0 0
Ditto, Ceylon	42 10 0
Ditto, Mauritius	42 10 0
Palm, Lagos	32 5 0
Ditto, Nut Kernel	35 0 0
Oleine	17 5 0
Sperm	30 0 0
Lubricum, U.S.	0 7 0
Petroleum, refined	0 0 6½
Tar, Stockholm	1 6 0
Ditto, Archangel	0 19 6
Linseed Oil	0 2 6
Baltic Oil	0 2 9
Turpentine	0 3 2
Putty (Genuine Linseed Oil	0 9 0
Pure Linseed Oil	0 9 0
"Stority" Brand	0 9 0

GLASS (IN CRATES).

English Sheet Glass: 15oz.	21oz.	26oz.
Fourths	5d.	5d.
Thirds	5d.	6d.
Fluted Sheet	4d.	5d.
Hartley's English Rolled Plate	3d.	3½d.
Figured Rolled and Repousse	4d.	5d.

VARNISHES, &c. Per gallon.

Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Fine French Oil	1 1 0
Eggshell Flating Varnish	0 15 9
White Copal Enamel	1 4 9
Extra Pale Paper	0 13 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knottling	0 10 6
French and Brush Polish	0 10 0

The death is announced from Aberdeen, at the age of seventy, of Mr. William Smith, architect and surveyor, of that town.

Mr. Swarbrick, deputy surveyor at Swansea, has been granted an honorarium of £100 for extra work done during the illness of the late surveyor, Mr. G. Bell.

Consideration of the revised schedule of professional charges will be resumed at the general meeting of the Royal Institute of British Architects on Feb. 1, when the attendance of members is earnestly requested.

At Luton a new council school in Tennyson-road, built, at an outlay of £8,000, from plans by Messrs. J. R. Brown and Sons, of that town, has been formally opened. The builder was Mr. T. Higgs, of Northampton.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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OUR ILLUSTRATIONS.

The Cunard Building, Liverpool. Messrs. Withink and Thicknesse, F.F.R.I.B.A., Architects. Messrs. Mewes and Davis, Consulting Architects.

Private Chapel, Apsley Paddox, Oxfordshire. Interior and exterior views. Mr. Ernest Newton, A.R.A., P.R.I.B.A., Architect.

Extension of the Victoria Hospital, Burnley: Selected Design. Mr. William A. Pite, F.R.I.B.A., Architect.

Small Headquarters and Drill Hall for a Country Town: BUILDING NEWS Designing Club. Three selected designs.

Reinforced-Concrete Buildings.

THE TIMBER QUESTION: SOME SUBSTITUTES.

The question of the supply of timber is becoming a serious one, as the stocks now in hand are diminishing fast, and the arrivals of the timber that reach us in ordinary times from Finland and Russia must, for the time, stop until something is done with the Germans who now control the exit of the Baltic. The ports facing the Skager Rack, Christiania, Frederickstad, Gottenburg, and others from which the best timber is shipped, hesitate to ship cargoes which must run the gauntlet of the mines.

The yellow and whitewood of Sweden, Finland, and Russia have been our main stay and backbone of late years; Sweden, above all, has cut timber of all sizes to suit our markets: the battens, deals, and planks for joiners' work, the varying sizes used for timbering in houses, from the slate and tile battens to the 2 by 3 up to 12 by 4. The Christiania and Frederickstad consignments are the finest, and of the first quality that the world produces, though many of the Russian deliveries are good, the St. Petersburg and the best Gefle especially being very hard and clean.

If the supply is to stop from these countries, we must look farther afield. The freights will be higher, but may not, if the timber is bought at a reasonable price, send prices higher than are now asked for Swedish and other wood, the cost of which at the moment is almost prohibitive for ordinary building. The doors, sashes, and frames, and other joiners' work, including that for horticultural work, such as sash-bars, rails, stiles, etc., can now be produced by English joinery works almost as cheaply as those imported; but, of course, the joinery works will have to buy timber at higher rates.

Some of our Colonies can supply any amount of timber—pitchpine, Australian redwood, and other softer woods. At the Colonial Exhibition many years back a very large variety of wood was exhibited which won praise from all. Take the Australian redwood, which has been so largely used in this country for road-paving: this is very free from knots, sap, and similar defects, but it is heavier than the Swedish wood, though we do not think it exceeds that of Gefle. Of course, the freight would be greater; for timbering purposes it should be a good substitute. Russia has enormous forests of fir and similar timbers in Siberia and bordering the Trans-Siberian Railway, if she can get

them to us; while on the White Sea very fine deals and planks are shipped in ordinary times from Archangel and Onega.

A substitute for fir joists, where it is not a question of price, and a good substitute, would be the fire-resisting floor of steel joists, say, 2ft. to 3ft. apart, with concrete of cokebreeze and cement filled in between, brought $\frac{1}{2}$ in. below the bottom flange, and above the upper one with a thin bed of cement and sand to render the upper surface level, then a thin bed of asphalt, and a parquet floor or a pitchpine one laid on that; or one of the patent pavings of imitation mosaic or a similar kind of finish in a compound of cork and coloured cement. The ceiling under would want only two coats of plastering, and would not require to be lathed. The absence of laths and wood joists would do away with the cracks so often seen in ceilings if the two coats of plastering were done in well-matured material, and the setting coat has the moisture well-trowelled out of it to a hard surface. This floor should be nearly soundproof, and very firm to walk on—unlike the floors laid on fir joists, that shake half the furniture as you walk.

The ground floor could be of cement-concrete, similar to that described to be laid by the local authorities over the site. This floor would only need the 6 in. of cement-concrete with the thin coat of asphalt and wood block, or either of the other floors already mentioned. Floors of the kind described would lend themselves well to square carpets of Persian or Turkey or Indian make, or even mats of similar kind.

Many of the casements could be of wrought iron, such as have been made for the last fifty years, of artistic design, and with up-to-date fastenings. With the floors described, and the casements in wrought iron, roof-timbers of pitchpine or Australian redwood, doors of pitchpine, lintels of rolled steel, little fir timber would be wanted until the trade is in full swing again.

There are, of course, many countries that have large forests of fir, but labour in them is so much more expensive; and besides, there are not the facilities for getting to ports, or sawing it to the required sizes, and the cost of freight is so much greater. Much of the timber lately imported is not really fit to use. It is very clean and bright to look at; but it ought to have twelve months' seasoning in the docks before it is worked, or else be dried in hot air chambers; but "Needs must when the — drives."

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A meeting of the Royal Institute of British Architects was held on Monday evening, Mr. A. W. Stephens Cross, M.A., vice-president, in the chair. Mr. Hubbard, F.S.A., announced with regret the death of Mr. John Henry Cossar, Licentiate, of Borrowash, Derby.

VARALLO AND ITS IMITATIONS.

Mr. F. C. Eden, M.A., read a paper on the hillside sanctuaries of the districts to the south of Monte Rosa and the Simplon, illustrated by a series of excellent photographs. These sanctuaries are, he explained, of every degree of architectural importance, ranging upwards from the tiny mountain shrine, rudely built and poorly furnished, through the modest church, provided with lodgings for a chaplain or a suite of rooms for the accommodation and refreshment of pilgrims, to the vast proportions of such an institution as Oropa, dominated by its enormous hospice. Others consist of scattered chapels grouped round a monastery, or strung out along the way to a pilgrimage church, famed for the possession of a miraculous image or other venerated object. But the most complex and interesting type of sanctuary is undoubtedly the Sacro Monte. This consists of a series of chapel-like buildings, designed to protect and exhibit groups of life-sized statuary, provided with porticoes or other shelter for spectators, and so arranged as to be approached in a definite order. Of these, that on the steep hillside of Varallo is the most famous, both as being the first thing of its kind, and for the great artists who participated in its production. It was begun in 1481 by Bernardino Caringi, a minor observant of the Franciscan Order, and ten years later the Chapel of the Holy Sepulchre was inaugurated. When Caringi died in 1499 he left a sufficient number of completed groups to make his conception clear. Additional chapels were subsequently added on arbitrarily selected sites, and towards the end of the 16th century Pellegrino Tibaldi was called in to rearrange the groups. In spite of their variety, the planning of the chapels in these sanctuaries is of the simplest. Three systems have been followed. The very earliest was a simple rectangular chamber without any sort of barrier or division, so that the spectators actually passed through the show-space. Afterwards the place for spectators was raised off. The partition was effected by a screen or grille of carved wood, so designed as to allow an easy view of the ceiling and wall paintings as well as the figures. Most of these screens are highly ornate and varied in design. In the latest examples the whole of the interior space is given up to the sculptures, and an external portico is added for the accommodation of the pilgrims. Both methods, the screen and the portico, are used at Orta; at Varese the

latter only. The walls are of plastered rubble, with granite dressings, and the roofs are covered with heavy stone slabs. At Varallo it is the piazza, with its two-storied cloister and circumjacent chapels that must be deemed the climax of the whole composition—not the big church, which strikes the only jarring note, with its aggressive modern façade. In a corner of the cloister an insignificant doorway, adorned with nice decorative painting, leads to the earliest of Carini's buildings. This contains a replica of the Holy Sepulchre, hewn out of the rock, and may be considered the focus of the series, the main object of pilgrimage. Part of the north side is occupied by a reproduction of the Scala Santa, reaching the upper cloister between an avenue of delicate columns. The opposite corner of the piazza is occupied by the more important chapels, partly raised on lofty substructures, partly on the native rock, and approached by flights of steps. At Varallo the chief interest centres in the contents of the chapels, at Orta and Varese in the buildings themselves. These are designed to contain groups of painted imagery, which combine with their frescoed backgrounds to form tableaux of Sacred History. The earliest figures, those which came from the Franciscan workshop, were of wood. But early in the 16th century Gaudenzio Ferrari, then a young man, was summoned to fresco the convent church at Varallo with the story of the Passion. He introduced the use of terracotta in place of timber for the figure groups, and in 1523 was engaged upon the groups and frescoes of the Crucifixion Chapel. Several other artists of note were employed, the most eminent of whom was Jean Wespin, a native of Dinant, in Belgium (1560-1615), known according to the Italian practice by the nickname Tabacchetti. The Sacro Monte of Orta, begun in 1585 by Cletio, occupies a wooded promontory overhanging the town and lake of that name. The same materials are employed here as at Varallo—viz., granite and plaster; but with the addition of a rusty green serpentine, which takes and retains the finest detail, and is used for the smaller moulded members. The lay-out is less confused than at Varallo, and the chapels seem to have been placed so as to get the best effect from each separate building, rather than with an eye to picturesqueness of

friar, Giovanni Battista Aguggiari. The chapels themselves are on a more ambitious scale than had been attempted before, and stand on lofty substructures which jut, like bastions, from the retaining walls of the road. The subjects illustrated are the Fifteen Mysteries of the Rosary, divided into the usual triad—Joyful, Sorrowful, and Glorious. The commencement of each group is marked by a triumphal arch and a fountain, the church at the top being the cleverest of the whole. The design was submitted to a local architect, Bernascone of Varese. Begun in 1606, a few years after those of Orta, the buildings are a century later in feeling; red tiles and yellowish stucco replace the stone roofs and whitewashed walls, and granite is more sparingly employed. The groups display clever engineering and good planning. The great establishment in the mountains above Biella, known as the Sanctuary of Oropa, is the growth of sixteen centuries. Controlled successively by Benedictines, Cistercians, and the Chapter of Biella, the affairs of the institution, ever since the consecration of the present church in 1600, have been administered by a mixed lay and clerical committee of management. The buildings lie on the sloping ground at the head of a short, steep valley. A grassy slope to the left of the main road, just below the hospice, is dotted with black and white chapels, containing the usual terracotta groups. In 1659 these were twenty-five in number, and in 1681, twenty-six; but since there are now no more than eighteen, most of them built about the year 1690, it may be inferred that the earlier ones were of quite modest dimensions, and were suffered to fall into decay, or were pulled down to make room for those now standing. The buildings of the hospice are planned round an immense quadrangle, two sides being prolonged southwards as wings at either end of the entrance façade. The church, a small and unpretentious structure, juts out from the east side of the court. This is surrounded by a cloister walk, of two stories for some part of its circuit. Two architects were connected with the work, Negro di Pralungo, who was engaged upon the quadrangle about the same time that the erection of the church was proceeding, and the more famous Filippo Juvara, who completed the scheme in 1720, by the design of the southern or entrance front. This is

treatment of the small rectangular, polygonal, and circular edifices.

Mr. E. P. Warren seconded the motion, remarking that at Orta the general plan of the buildings was now rendered confused owing to the luxuriant subsequent growth of chestnut trees, magnolias, and other shrubs which closely surrounded the chapels, but permitted of lovely glimpses of the town and lake below. There was a roughness of detail in the treatment of the coarse-grained granite columns which reminded one of the churches of Brittany. At Varallo the effect was less concentrated, but here the terracotta figures were of extraordinary excellence, but some of the mural paintings were tawdry. The figures were arrayed in clothing and were provided with what looked like real hair. For the instruction of peasants who could neither read nor write these realistic figures had served their end, and provided an appeal which was simple and definite. Here, however, and in all the great cathedrals and churches, works which were conceived in the fervour of religious devotion necessarily became to subsequent generations merely a great business, to be maintained to the best advantage.

Mr. Walter Tapper referred to the interesting work to be seen in the colonnades and their capitals and the iron grilles of the sanctuary chapels.

Mr. W. Curtis Green also supported the vote of thanks.

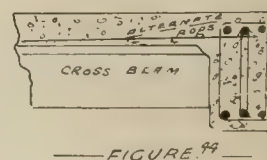
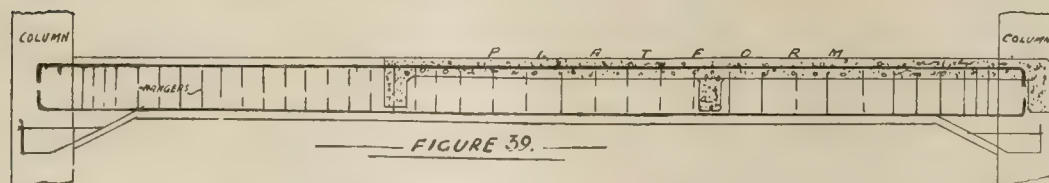
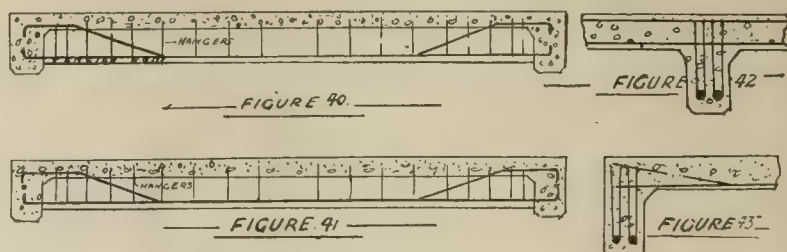
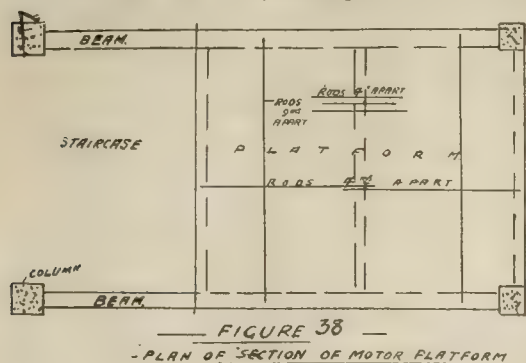
In replying, Mr. Eden said the figures in the chapels were often draped in linen and provided with flaxen wigs; they were given fresh heads and changed in character to suit new requirements, as the number of chapels was augmented, and their dedications were altered.

REINFORCED-CONCRETE BUILDINGS.—II.

MESSRS. TURNER'S ASBESTOS FACTORY, TRAFFORD PARK, MANCHESTER.

Messrs. Butterworth and Duncan, Rochdale, Architects.

Our previous issue contained some details of the general construction employed in the reinforced-concrete frame building erected as part of this extensive scheme, and the present article shows some of the interesting detail



grouping. The circular Chapel of the Stigmata is the earliest example of such a building, surrounded by a portico, and was the model for much subsequent work here and at Varese; the form was also introduced by the Renaissance painters in the architectural backgrounds to their compositions. The lecturer proceeded to describe in detail the other chapels at Orta and also the picturesque well-house, with its flat pyramidal canopy, a building added to the group in 1612. At Varese the scheme of a Sacro Monte again originated with the Franciscan Order, the moving spirit being a Capuchin

approached from the forecourt by a stair of noble proportions; the ground story is entirely open from front to back, so as to form a loggia the whole depth of the block.

Mr. Paul Waterhouse proposed a vote of thanks to Mr. Eden for his charming and beautifully illustrated paper, the work of an enthusiast and a recognised authority on the buildings of the style and period of these North Italian sanctuaries. He also had visited these interesting groups of hillside chapels, strung like beads on the rosaries of the winding roads, and had found them full of architectural suggestions from the clever

interspersed throughout the block of buildings.

The motor platform, the position of which may be seen from the plans given in the previous issue, is illustrated in detail in Figs. 38 to 44. The structural work for this platform is approximately 24ft. long and 13ft. wide. The actual platform measures about 16ft. by 13ft., supported in the direction of its length on rather more than two-thirds of the longer beam.

The flooring employed is 5in. thick, with a lattice of tension rods in the lower planes and also above the supporting beams, to

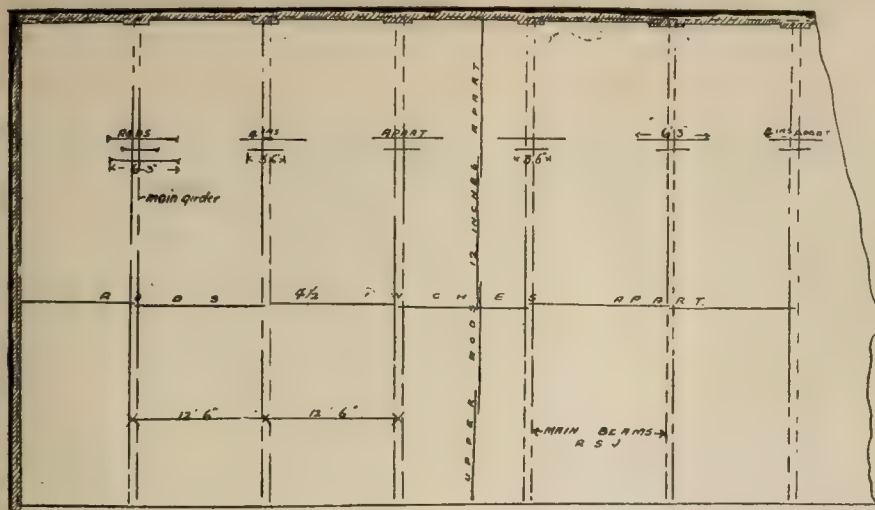


FIGURE 45
PART PLAN 6' SUSPENDED
FLOOR

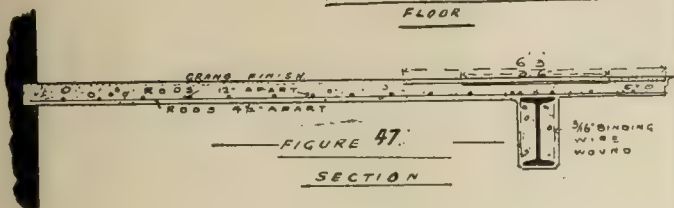


FIGURE 47
SECTION

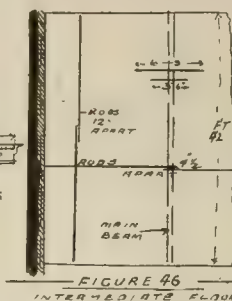


FIGURE 46
INTERMEDIATE FLOOR

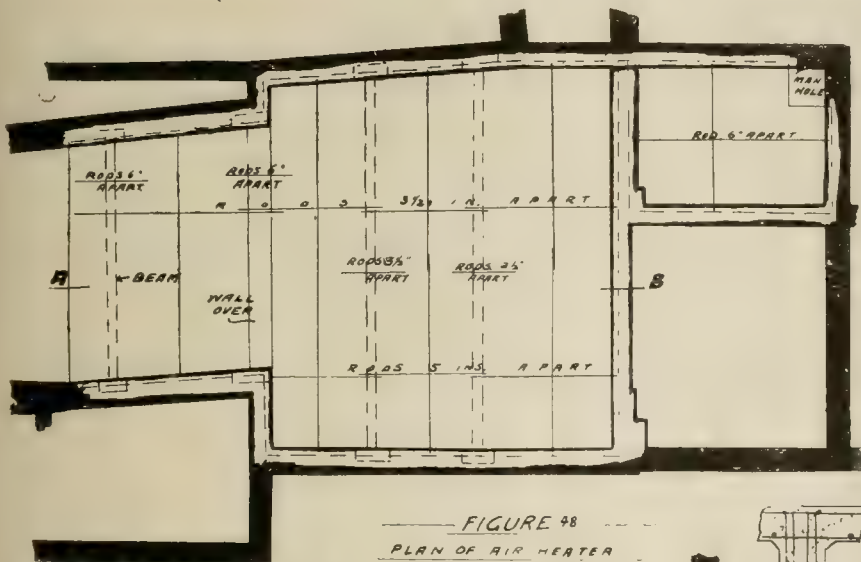


FIGURE 48
PLAN OF AIR HEATER

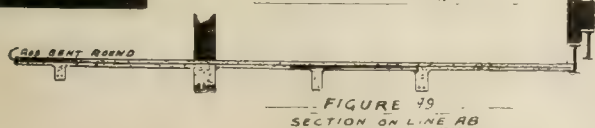


FIGURE 49
SECTION ON LINE AB

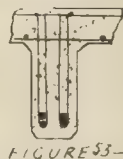


FIGURE 50

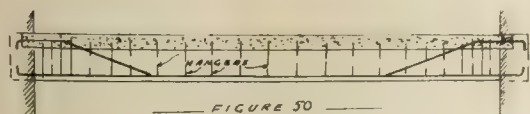


FIGURE 51

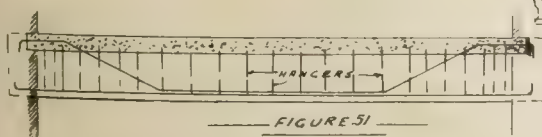


FIGURE 52

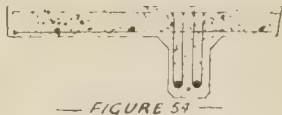


FIGURE 53

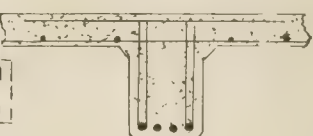


FIGURE 54

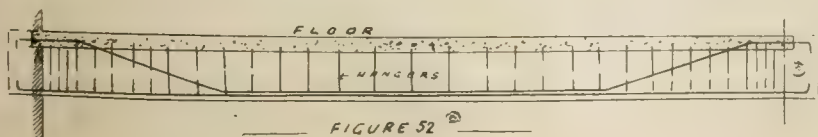


FIGURE 55

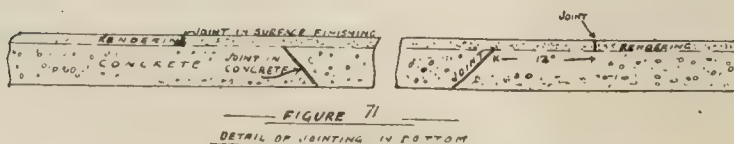
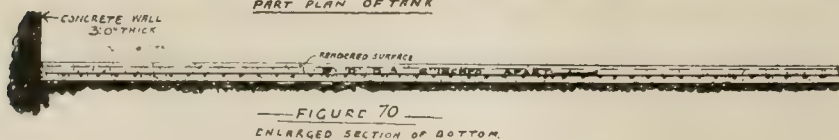
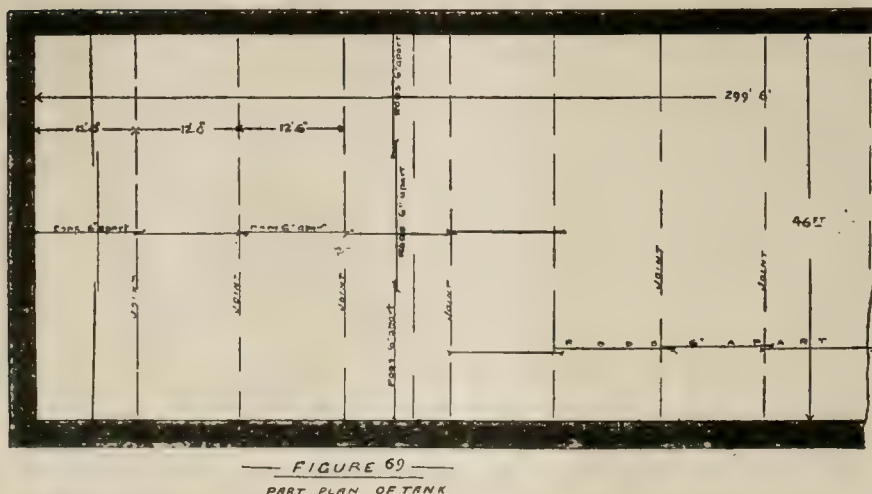
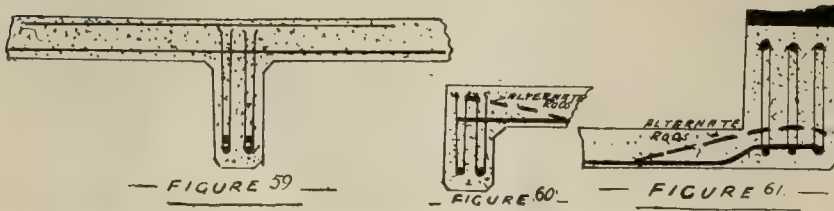
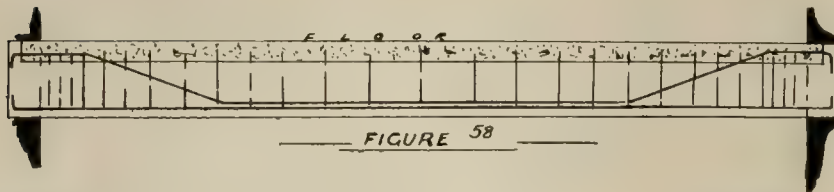
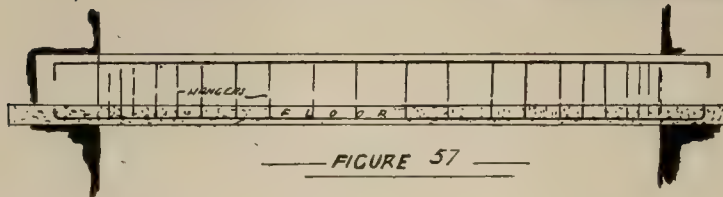
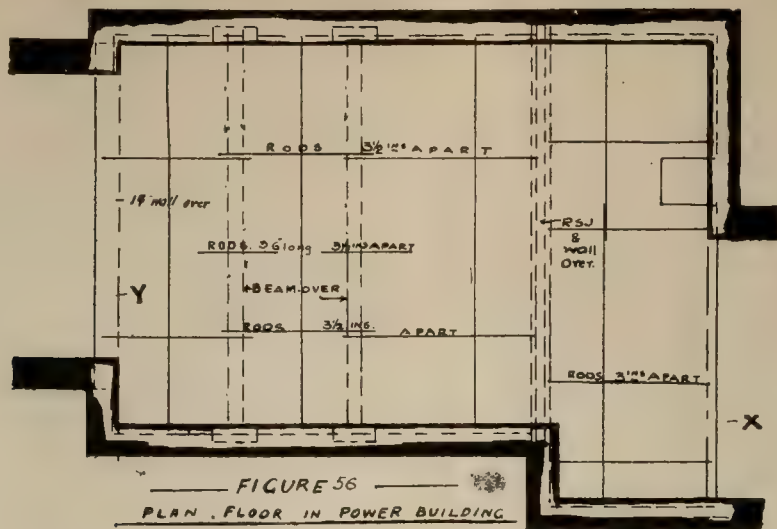
render the floor continuous. This arrangement is shown on the general plan (Fig. 38) and in the detail sections (Figs. 42 to 44). The principal beams, of which Fig. 39 is an elevation and Fig. 44 an enlarged central section, measures only 12in. deep and 9in. wide. It is, however, heavily reinforced with six large rods closely linked. The smaller beams employed are shown in Figs. 40 to 43. They are 12ft. 6in. long, 9in. deep, and 6in. wide. Two tension-rods are employed in the central section, and one is bent up to augment the shear resistance, and homogeneity provided by the hangers. Figs. 40 and 42 show the central cross-beam, and Figs. 41 and 43 the beam at the edge of the platform, of which the beam forms an apron.

An example of suspended-floor construction is shown in Figs. 45, 46, and 47. These floors are supported on R.S.J. beams placed at the 12ft. 6in. intervals shown on plan (Fig. 45). The floor, which is 5in. thick, is continuous. It has a span of 12ft. at the end bays and 12ft. 6in. in the central bays. Tension-rods over the supporting beams are alternately short and long, and placed at 4in. intervals, and the lattice of rods forming the direct-tension resistance in the lower planes of the floor are placed 4 1/2in. apart in one direction and 12in. apart in the other. Fig. 46 shows the end bay of a similar intermediate floor. Some idea of the extent of these works may be gathered from the fact that one section alone of this type of floor is over 300ft. long, and about 50ft. wide, having an area of 15,000 superficial feet.

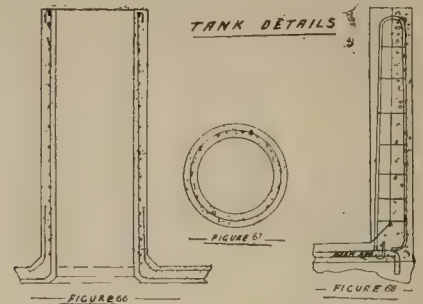
The floor-construction of the air-heater is shown in details (Figs. 48 to 55). This part of the work is in reinforced concrete throughout. The plan (Fig. 48) shows the disposition of the main beams and the arrangement of floor-rods at 3 1/2in. intervals in the longer bays and 5in. intervals in the shorter, with stout rods at 3 1/2in. intervals, to take the negative stress above the beams. Fig. 49 shows the section of this floor along line AB on the plan. It will be seen from this section that the floor-rods are bent completely round, to take the reversed stresses in the overhanging portion. Fig. 51 is an elevation of the main beam under the wall, which has a span of 13ft. 3in., and a section 16in. deep and 9in. wide, with four heavy tension-rods, shown in the section of the centre of the beam (Fig. 55). Fig. 50 is an elevation of one of the cross-beams, adjacent to the overhanging edge. It has a 13ft. span and a section 10in. deep and 7in. wide, with two tension-rods in the central section, shown in Fig. 54. Fig. 52 shows the main cross-beams, of which there are two, with spans of 20ft. 9in., a depth of 16in., and a width of 7in. The reinforcement for the maximum tension comprising four heavy rods.

Fig. 56 is a plan of the power-house. The spans of the main beams in this floor average about 18ft., and they are 15in. deep and 7in. wide, constructed to the detail shown in elevation (Fig. 58) and section (Fig. 59). The beam is narrow, and has four tension-rods in the central section. Fig. 60 is a section of a 9in. by 7in. beam across the small span marked X on the plan. Fig. 57 is an elevation of the upstand beam, of 13ft. span, under the wall at Y on the plan (Fig. 56). This beam, of which Fig. 61 is a cross-section, is 20in. deep and 13 1/2in. wide, doubly reinforced with six stout tension- and compression-rods, and is connected to the floor in the manner shown in detail (Fig. 61).

Some very interesting detail is provided in the tank-construction shown in Figs. 62 to 71. Fig. 62 illustrates the plan of a tank constructed over the power-house, entirely in reinforced concrete. It is 27ft. square and 6ft. deep, having a total content of 4,374 feet cube, which gives a capacity of about 25,000 gallons. The general construction, shown in Fig. 63, consists of walls formed in reinforced concrete, 5in. thick; the walls have a double reinforcement of rods, laid longitudinally at 4in. intervals in the outer system, and 12in. intervals in the inner, whilst the vertical rods are placed at 6in. intervals throughout. These latter are bent round the angle at the base of the walls and well secured to the concrete forming the

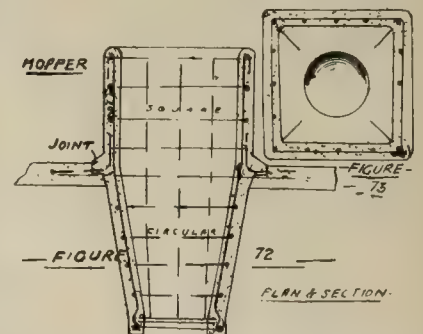


bottom of the tank. Buttresses are formed in these walls, reinforced with rods bent round at the base, as shown in detail (Fig. 68). The main beams, shown in Fig. 63, have a span of 27ft. They are 20in. deep and 9in. wide, with a dual reinforcement of a double set of tension-rods in the centre section. This tank is provided with a central cylinder, for the accommodation of the pump-pipe, which draws the supplies from a well 700ft. in depth. The construction employed to support this cylinder is shown in



Figs. 63, 64, and 65. A pair of cross-beams, reinforced with six rods for both tension and compression stresses, are carried into the lower part of the main beams, in the manner shown in Fig. 65. These beams are 9in. deep and 12in. wide, and special care has to be taken to secure homogeneity of construction by bending the rods into the main beams and hooking them securely to the reinforcement of the latter. The shaft of the cylinders is shown in Figs. 66 and 67. The clear diameter is 2ft., and a reinforcement of vertical and horizontal rods is provided at 7in. intervals in the 4in. concrete wall of the shaft. Extra angle-rods secure the construction to the floor of the tank.

Another example of tank construction is shown in detail in Figs. 69, 70, and 71. This tank is formed on the ground, with solid 3ft. concrete walls and a reinforced floor, with rods placed at 6in. intervals in both directions. Fig. 70 shows this floor in section.



It will be seen from Fig. 71 that the jointing in the rendered surface is placed at a distance of 12in. from the splayed joint in the floor: a useful precaution to secure a sound joint.

Another item of interesting construction is the hopper shafts, placed on the second floor of the building illustrated in the plan shown in Fig. 4 (illustrated in the previous issue). These shafts, shown in detail in Figs. 72 (section) and 73 (plan), are square at the top, devolving into a circular chute at the bottom. They are formed in 4in. of concrete, with a lattice reinforcement of rods 7in. apart, with extra angle-rods tying the construction to the floor.

The whole of these extensive reinforced-concrete works, which include reservoirs of a total capacity of about 400,000 gallons and 12,000 yards of paving, were designed and executed by Stuart's Granolithic Co., Ltd., of 45, Bedford-row, W.C.

The Local Government Board have informed the City Corporation that they have decided to sanction the scheme for the improvement of Cloth Fair under Part 2 of the Housing of the Working Classes Act, 1890. An order giving effect to this decision will be issued in due course.

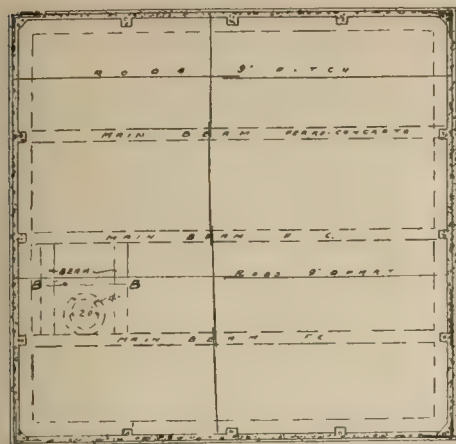


FIGURE 62
PLAN OF TANK 27' x 10'

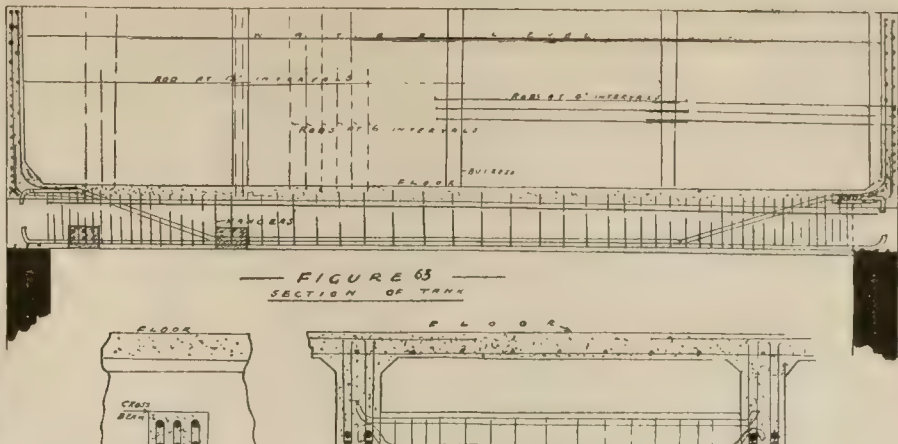


FIGURE 63
SECTION OF TANK

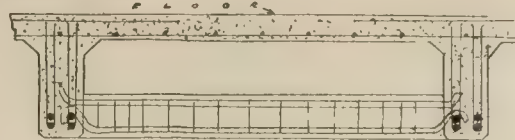


FIGURE 64

"BUILDING NEWS" DESIGNING CLUB.

HEADQUARTERS AND DRILL-HALL FOR A COUNTRY TOWN.

Prior to commencing our review of the designs submitted in this competition it will be a convenience to reprint the instructions issued to the members of our Club to work to. This will enable readers to ascertain the stipulated requirements before coming to conclusions on the relative merits of the published plans. The first place is taken by "Penwith," "September Morn" ranks second, and "Walbroke" is the third favourite. The instructions were as follows: "A small Headquarters Building, including a drill-hall 80ft. long by 40ft. wide, having adjoining it at the rear end a miniature range 80ft. long by 20ft. wide. This latter to be a comparatively low building. A quartermaster's store and office, the two occupying 25ft. by 20ft., or that area; a small armoury, a kitchen, and offices. Conveniences to be properly isolated by well-ventilated lobbies. The building to form a local centre in a country town suburb on a level corner site; the frontage to the main turnpike road, facing east, 95ft. wide, the building line being set back 15ft. from footway; the building line in return road may come up to the frontage. Put posts and chains to enclose paved forecourt. The depth of the site is considerable, and does not concern this plan, access to the rear land being got from the return roadway on the south frontage. The front part of the building on the east is to be two stories high, and on the first floor provide the officers' room, a sergeants' room, and room for men. First floor approached by two staircases, so far separating officers from the men. A balcony is to overlook inside of drill-hall, for use of officers. These three upper rooms will occupy a space of, say, 60ft. by 20ft., or of that total superficial area allocated for the separate uses specified. On the ground floor, near the entrance, with its 10ft. wide passage leading to drill-hall, put a small room for the orderly. The architectural treatment to be adapted to brick, roofs to be covered with tiles. Style simple, but picturesquely handled. The drill-hall front gable will be masked by the frontage building's upper stage. Construct drill-hall roof with steel trusses and concrete-breeze reinforced fillings, asphalted over outside. Dormer lights to hall. Economy is essential, but good appearance and efficiency intended, remembering the prominent site and purpose of the building. Scale of plans 1/64th to the inch. The front elevation 4ft. to the inch. Side elevation and section 8ft. to the inch. If space allows, add a view showing return front in quick perspective, making most of the High-road façade, though the whole building is to be kept all in character, and not the mere backing to a front elevational building."

We have accorded the post of honour to "Penwith," by reason chiefly of his superior elevations. This will be thought questionable, we dare say, and we admit having had serious misgivings about the variations dis-

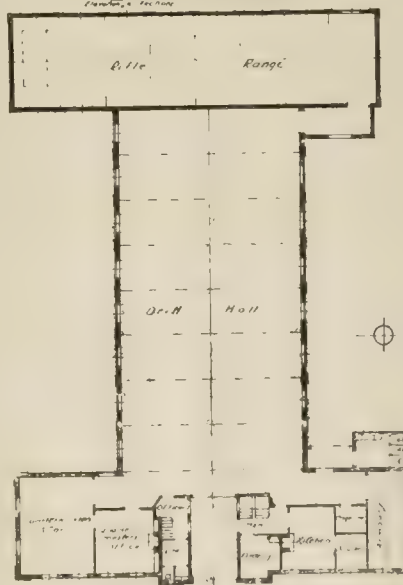
coverable between the spacings of his façade and the lay-out of his plans. This may be noted particularly in so far as the dimensions of the first-floor middle room and the widths of the stairways are concerned. When the dividers test the accuracy of the disposition of the divisions of this upper floor, it is at once clear that the space will not properly permit of three windows over the portal to be worked in or to group as drawn on the elevation, because both the side openings must, as they now stand, be partly blocked

A section illustrating the connection between the front building and this hall would have demonstrated this difficulty, which seems, however, to have escaped "Penwith's" attention. The windows are not sufficiently well shown in the front wall of the first-floor plan, and look as if they were intentionally left ambiguous. The pitch of the curved roof of the drill-hall might have gained by being made somewhat higher, and this would have also given the balcony a better headroom.

The aim of our Club is best realised by plainly pointing out faults of this nature; but our criticisms are intended to be taken in good part and accepted for what they are worth. Students who aim at success will do well to understand that our remarks are made only for one end, and also to remember the platitude that "Dogged does the trick," always provided tricky dodging is avoided. This sort of thing may, or may not, deceive others; its achievements are very doubtful, anyway, and the worst of such practices is that the individual who works on such lines is apt to mislead himself. As it happens in this case "Penwith" has misled no one, and we will credit him only this once for carelessness, such as must be avoided in the future. It is a fatal fault to indulge in slack planning, and all his painstaking precision in jointing up the red-brick dressings and arches of his 1/4 in. scale elevation is of very secondary importance; in comparison with that which we complain of, such fuss ranks as piffle. In judging a lot of designs a broad view has to be taken, and we repeat that "Penwith" chiefly scores on account of his elevations. This may appear putting the cart before the horse, and one must not pet the cart and neglect the horse. The question, nevertheless, fairly to be asked is why so much should be made of a scheme with such faults? The answer is simple enough: Because neither of the other designs is better, and not one of the lot is actually so good, as a whole. We are far from claiming that the choice has fallen on an ideal proposal. It deserves the first place by being a simple and sensible solution of our problem for the purpose in hand. Its faults we have not overlooked. For example, the flues from the ground-floor fireplaces are left out on the first-floor plan, and the stacks ought to have been drawn on the end elevation, as well as the chimneys from the officers' and men's rooms. By placing the scullery in the front of the building it has no yard-door, and we miss the kitchen store and larder. This right-hand part of the ground plan could easily be rearranged with much advantage. The sergeants' room on the first floor wants a door leading on to the landing of the officers' stairs, to enable them to see the N.C.O., or, if need be, pass through his room to reach the men's apartment. The officers' lavatory under the stairs is too cramped and also is short in head-room and light. The side elevation of the drill-hall is very good and unpretentious. The insistence with which "Penwith" parades his centre lines on his elevations is meaningless in the face of the discrepancies of the plans already spoken of.



FIRST FLOOR PLAN



GROUND PLAN

BUILDING NEWS Designing Club: A Small Headquarters and Drill-Hall for a Country Town. Plans placed first "Penwith."

up by the end of the cross partitions. Moreover, the windows to these staircases, one for the officers and one for the men, do not occupy a central position in regard to the width of the landings or half-spaces of the stairs, as set out on the plan. The reduced copy given of the plan hardly shows this, as it is the original. These windows must come on one side if the elevation is followed. That item is not exactly vital, perhaps. The next criticism to be mentioned is more important, because there is too little headroom allowed for the officers' gallery where it projects into the drill-hall.

"September Morn" shows a pleasant sense of the picturesque, and groups his central feature in front adroitly; but a wholesome rule of prime importance is that good architecture depends upon its appropriateness. This is recognised by "Penwith's" severity and the repetition of plain sash windows, also the idea of the pediment panel for the conventional Royal Arms. Suitability is thus suggested by him with reference to military discipline, strict order, and a recognition of regulations. There appears to be too much flavour of the comfortable amenities of a cottage-like hostelry or club in the front submitted by "September Morn." He has handled his Headquarters with a domestic quaintness which is out of place with war régime, and, besides, his plans are not particularly well worked out. His ugly, narrow, cramped passages leading to the lavatories are bad details, showing the awkward cutting up of the armoury space. The alcove marked "lobby" might have been differently situated, so as to work in line with the piers and principals of the drill-hall roof, and then this place could have been treated as an open, ventilated, disconnecting lobby to the conveniences and lavatory, and the armoury being made all one, including the present corridor, when it could still be reached from the quartermaster's end to the front. Too much space is devoted to the entrance-hall. A straight way in and out for access to the drill-hall would have made a better arrangement, as in "Penwith's" plan sketch. Of course, all these plans must be considered in the light of sketches. Still, the plans and elevations should at least approximately, conform one to the other. The sergeants' room upstairs is cut off too much from the officers, and a door into the men's room would get over that isolation without intrusion upon the officers' privacy, in "September Morn's" building.

"Walbroke" is not exactly to be accounted an easy third, though his lay-out is certainly one of the best, and the parts are well worked out. The elevation has a high-shouldered appearance, and the oriel, carried forward with a flat soffit under the semicircular pediment, seems to give a lumpy look. The façade needs lengthening, for proportion's sake, while the side of the drill-hall seems stilted. The whole group might work out better than we are inclined to think; hence our difficulty in allocating a place for this design, which has been capably worked out and is very praiseworthy for its draughtsmanship. The officers' side-door is big enough, though not important-looking, as it might have been made. A second small adjacent window would have greatly improved the effect without detriment to the Q.M.S. adjoining. The drill hall roof is not particularly original; but this kind of construction is not unsuitable where money is not forthcoming to pay for something less rigidly utilitarian in style. The first-floor plan is admirably arranged, and provision is made for carrying the chimney-stacks at the apex of the hips.

"Pinto" is free from the little points just mentioned, though the officers seem to be provided with a very big room. The plan is compactly arranged; but the corridors are dark and the lavatories are cramped; also more isolation would be necessary, as well as space. The front elevation is approximately similar in notion with "Penwith's" design. The middle chimneys are too squat, and this may be due to the absence of room on the sheet to draw the stacks higher. A transverse section of the drill-hall ought to have been given. The side elevation of the rear premises is out of harmony with the front building, and much too cut up and pretensions.

"Why" devotes an enormous degree of pains to his work, and draws very carefully. His design is original and eminently quaint; but we do not like his plan, so narrow and long, with a passage nearly as long as the rifle-range, which latter is set end-on to the drill-hall. All the other competitors place the former crossways at right-angles with the big hall, and that is what we intended. "Why's" frontal building is very narrow and very tall, with much space lost in the lofty

roof, which is flanked by a pair of quasi-towers, awkwardly gabled both ways without a break, and so are flush with the main walls. The squat archway to the semicircular porch, with steps to match, is too extravagant, and very like the opening to a tunnel. The entrance doors are odd and too elaborated. The central window to the men's narrow, awkwardly-shaped room would be inadequate, and the balcony looks out of place, crushing down so hard upon the unhappy tile-and-brick portal arch already mentioned, with its stepping blocked voussoirs. The panelling of the folding pair of doors is not very nicely set out, some tall and some long the other way about. The side as well as the front elevations omit the return gables to the corner features already spoken of. The drill-hall rear part is abundantly lofty, and its four dormers scarcely accord with the frontal design. The first floor is spoiled by the small long and dark room provided for the men. The lavatory provision is too small, and the officers seem to be intended to make shift without any. The front end of the drill-hall is too low, being placed under the apartments of the sergeant and officers on the first floor. No section is given of this, but the number of risers to the stairs makes it evident that our remarks are justified.

"Sea Wolf" has not been able to make room on his drawing for all the length of his front elevation. It has a pleasing centrepiece which would be effective in execution, though the shape of his windows seems commonplace—a remark also true of the front chimneys emerging so timidly out of the roof. The planning is spoilt by dark staircases and passages. No bed- or living-rooms were asked for, but we did require a section of the drill-hall. This, however, is conspicuous by its absence.

"Alpha" has a longer frontage building than "Sea Wolf," and yet he gets it all in on the sheet. The drill-hall is put the wrong way round on the site, and the scrappy way in which the subordinate parts are worked in merits little commendation. The first floor has a long, narrow room for the men, and the officers are stuck away at the far end of the building, their balcony being made a top-lit cramped passage leading to the officers' conveniences. The side elevation is drawn the reverse way round to the plan, which oversight is a serious fault, because the north return is entirely different to what happens on the south. Consequently, any sort of fit is out of the question. The main portal is not attractive, and the front is too cut up with four projections, which in themselves are not sufficiently decided to warrant the hipped roofs over each bay.

"Pergradus" is to be praised for neatness in preparing his brick-mullioned and transomed window-openings, which are small and cottage-like. In the middle of the front there is a projecting oriel, not badly composed, with a four-centred Tudor arch below for the entrance. Considerable space is wasted on staircase landings: otherwise this proposal is creditable. Notwithstanding, we condemn the dark passages. The author thinks more of a big-scale elevation than concerning himself about a good scheme of planning.

"Romulus" submits a workaday elevation and a workable plan; but the orderly room should look out into the entrance vestibule, so that the man in charge may work properly. Our remarks as to "Penwith's" first-floor plan apply appropriately enough to this one. The front has a workshop appearance.

"Raven" misses the point which we endeavoured to embody in our instructions. His drill-hall runs parallel to the main frontage, and the rifle range runs in the same direction. The view scarcely adds much to the chance of success. The chimneys are not drawn properly in perspective. "Raven" is neat and painstaking.

"Tonneller" is praiseworthy in trying his hand at plain, unsophisticated brickwork. The windmill effect of broad sweeps of dark arch stones in the brick window-heads may amuse the author, but they cease to amuse architects. The plans are based upon the idea of wasting space by working in dark

corners and ungainly passageways. The drill-hall roof is segmental.

"Ogee" has the merit of ranking as suitable and simple; but his front elevation suggests a private gentleman's stable building. Much valuable room is wasted on wide corridors, lighted from the ends. "Ogee's" south elevation of the drill-hall is quaint and pretty.

"Nemo" cannot expect a protracted notice, for his design, set out on two sheets, is too ordinary to expound.

"Empire" submits a bird's-eye which might mislead by being mistaken for a farmstead. Over the entrance arch is a gallery big enough for public use; thus it is clear that "Empire" did not grasp the intentions of limiting the balcony to officers' use and for their accommodation. "Empire" provides a very poor scheme and hall, quite disproportionate to his great gallery, squeezed up into the apex of the front-roof gable.

"Mersey" forwards pencil tracings only and rough sketch-plans, which he asks us to criticise, though he admits they cannot be reckoned in the competition. Illness caused his inability to finish his scheme. We, therefore, willingly comply, for his design has much merit, in the compactness and arrangement of the plans, particularly; however, the two open staircases at the front end of the drill-hall, to give access to the first floor, are an intrusion into its space. This could have been avoided by projecting them outside the main walls, right and left of the hall, and that would have left the gallery free and kept the men more to themselves. The style adopted is Flemish, and seems fairly suitable in treatment, though the middle windows on first floor over the entrance arch are ugly.

THE "EAGLE" CHIMNEY COWL.

This cowl is yet another device to cure smoky chimneys, and is constructed with an inner and outer tube. The inner tube is the continuation of the chimney proper, and a disc is provided in this tube to prevent the smoke which has once passed through being allowed to blow down again with back pressure or from other causes. The outer tube, which is not connected with the chimney, takes this smoke, which again mixes with the atmosphere. The disc is movable, being secured by bolts and nuts, but allowed to move up and down, so as not to form an obstacle to the sweep's brush. The outer casing of the cowl is made hexagonal in shape, so as to improve its appearance. There are no revolving or moving parts, so that not the slightest noise or irritation occurs. The cowl is made to fit inside an existing chimney-pot, or, in its longer form, to take the place of the chimney-pot. The only point requiring care in fixing the cowl is to be sure sufficient clearness is allowed for the smoke to get away from the bottom of the outer casing.

The makers are Messrs. Parker, Winder, and Achurch, Broad-street, Birmingham, and such is their confidence in the "Eagle" cowl that they guarantee to take the pot back and allow full price paid for it should it fail within one month from date supplied. This fact in itself speaks volumes for the "Eagle." The price varies from 22s. 6d. to 45s.

Mr James Edward Taylor Wainwright, of Alderley, Upton-road, Bidston, Cheshire, and of Liverpool, surveyor and valuer, who died on December 15, aged 63, left £56,592 gross, and £68,930 net personalty. He left numerous bequests to philanthropic institutions.

The education committee of the Somerset County Council report that although the erection of certain school buildings has been postponed until such times as tenders are likely to be obtained at reasonable prices, the Board of Education is pressing the question of the erection of a Coleford (Kilmersdon) new school. The committee have therefore undertaken to advertise for tenders as soon as the architects advise them that the condition of the building trade warrant the expectation that tenders will be received at reasonable prices, but that no tender will be accepted unless they fulfil these conditions.

Corrente Calamo.

We trust the following resolution, from the Yorkshire Federation, and from the Midland Centre, which is to be submitted to the general meeting of the National Federation of Building Trades Employers, at Koh-i-Noor House, Kingsway, W.C., on Wednesday next, will be unanimously carried:

That in the opinion of this meeting the cost of Accident, Health, and Unemployment Benefits should be borne by incomes instead of by industries, therefore this meeting appeals to the Government to so amend the Act, that all expenses of National Health, Unemployment, and Workmen's Compensation Insurance shall be paid for out of Income-tax monies, or out of the general taxation, instead of, as at present, by certain selected trades.

This Government is not likely to do what is asked. During its whole tenure of office it has been partial and unjust in its finance. But at the coming General Election this matter must be pressed on candidates everywhere. Why the leading trades of the country are to be additionally and specially penalised, one after the other, to help blind the general public to the costly experiments of Mr. Lloyd George, it is more and more difficult to see.

The important judgment of the full Court of Appeal in three cases affecting the law as to "Alien Enemies" suing and being sued in our courts was delivered on Tuesday last, January 20. Lord Justice Kennedy, our great common lawyer, had died suddenly, but he had done most of the work in shaping that judgment, in which all the seven Judges agreed. It is now laid down as a guiding principle that the test of an alien enemy is not nationality, but the place of carrying on business. From this it follows that even a British subject trading in an enemy's country may be, in law and for the time, an alien enemy; while an alien trading here becomes, so far, a British subject. Thus it is held that an alien enemy—i.e., one who is trading in an enemy's country—cannot sue in our courts of law. On the other hand, he can be sued there by British subjects for the enforcement of their debts and demands, provided that service, or notice, of the legal process can be made or brought to him. But as he can be sued in our courts, it is only common justice to allow him to defend himself there. There, again, there arises out of this liability to be sued a right of appeal in the usual way. Indeed, there is no way out of the legal and logical results that follow from the principles laid down, which are in accordance with justice and common-sense. In effect it is now clear that while alien enemies cannot sue in our courts during the war, they can be sued there, and so they can defend and appeal, as if they were British subjects.

There was a separate judgment in three other cases by British companies against Tilling, Ltd., which is of great importance. The point was whether a company which is registered in England can sue here, although all its directors and shareholders except one are alien enemies, living abroad. It is, of course, clear that an alien enemy firm could not do so. But the Court of Appeal now confirmed the ruling of the Court below, and held that a company so composed of alien enemies, when registered in England, acquires a separate legal entity, which entitles it to act as if it were an individual

entirely distinct from its directors and shareholders. Such a company becomes, indeed, a corporation, and as such it can sue, and be sued, in our courts, in its own name, quite apart from the fact that it is practically entirely composed of our alien enemies living abroad. In fact, by thus forming and registering these companies in our midst, instead of trading as partnerships, our enemies have shown a legal knowledge and foresight which we can almost admire. These registered companies become, in other words, emplacements for commercial fortifications or camps, in which they can carry on business during the war, though we believe the Government can, and will, prevent their profits and money from going into Germany. Lord Justice Buckley, our leading authority in company law, differed from the other six Judges, and delivered a separate and illuminating judgment. But this only shows that the law needs amending, and it is to be hoped that Parliament will at once seize the present opportunity of removing an absurdity which is also an injustice.

A leading timber merchant, in a communication to the *Times* of Monday last, blames the Port of London for the present high price of timber in London. As the P.L.A. have had to deal with far less timber than usual, one would have thought, he says, that the comparatively small amount of stock they were called upon to handle would have been piled away at once, and been available for immediate use. On the contrary, most of it has been on the quays two or three months, and most of it will be there another month or two. Many of the vessels that brought this timber were kept at Gravesend for some time, incurring demurrage. The result is that whereas one could a fortnight ago charter Norway to Hull (usually the same freight as London) at 40s. to 42s. 6d., the same steamers require 55s. to London. At present the Hull freights are at least 10s. less than London, owing to the delay, or anticipated delay, in discharging the cargo. A merchant therefore has to pay this extra price to get his supplies, thus increasing the cost. The normal freight is about 20s. to either Hull or London. But when, in addition, less than 50 per cent. of the stock is available, and will not be available for two or three months, when, in addition, it will be considerably damaged in quality by lying unprotected on the quays, when loss of interest and rent, the latter being payable from date of ship breaking bulk, are added, can one wonder that the price that the Government and their contractors have to pay is abnormally high and out of all proportion to the stock here if it was available? The Port of London Authority had, and, it is alleged, still have, a system whereby they employ a number of contractors, who, for a consideration, find men (gangers), who contract to pile away the timber at a schedule of prices per standard. These gangers pay their mates and themselves 1s. to 1s. 3d. per hour, and share out any profit there may be left after paying the above wages. They commence work at 8 o'clock and knock off at 4 o'clock. It is the avowed intention of the Port of London Authority to as far as possible do away with casual labour. It is also to the interest of the men to spin the work out, the trade being a seasonal one, little, if any, timber coming in after December. Result—considerable loss to merchants in rent, interest, excess freights, damage to cargo, and loss of orders

which go to outports. But extra profit to the P.L.A. in the form of rent paid for goods held up through the P.L.A. not delivering.

Not a few of our readers will regret to hear of the death, on January 7, of Mr. Walter Busbridge, of Grasmere, Herbert-road, Plumstead, whose services as a pioneer of technical education among the members of the building trades, dating from the days when few facilities of the kind existed, are familiar to many, and well deserved more public recognition. Born at Riverhead, near Sevenoaks, on March 15, 1840, he was apprenticed at the age of fifteen in the Royal Carriage Department of Woolwich Arsenal, and in 1858 he entered the drawing office, where he remained till his retirement. His own experience of the lack of available instruction led him to attend some classes started at the Arsenal in 1864 by Mr. T. Jones; and, in 1865, having obtained a first-class certificate at South Kensington in Building Construction, as self-taught, he established, in conjunction with Mr. Jones, at Woolwich, the first class for that subject in the London district. In October, 1866, Mr. Busbridge opened classes at St. Thomas's Schools (Woolwich) and St. Paul's Schools (Deptford). These were so successful—many of the students obtaining "firsts" in all their subjects—that his reputation as a science teacher was at once established. In the following year, in addition to these classes, he opened two others, one in Lambeth, the other at Dartford, with results that materially added to his reputation and subsequent success. In 1868 he started classes at Vauxhall and Westminster, in addition to which the members of the Amalgamated Society of Carpenters and Joiners residing on the north of the Thames requested him to open a class in their district, when he obtained special permission from the Science and Art Department to start one at the end of December, upon the condition that two lessons were given in each subject every week until the termination of the course. About this time he resigned his appointment in the Royal Arsenal, and from that time he threw his whole heart into the establishment and success of that group of classes which for years was recognised as the Metropolitan Drawing Classes, and which materially helped to make thousands of the men of London more intelligent and systematic workmen than they would otherwise have been. For ten consecutive years the distribution of prizes to the successful students of the classes was made at the Guildhall, when the Lord Mayors for successive years occupied the chair, and the prizes were distributed by their Royal Highnesses the Dukes of Connaught and Edinburgh, the Baroness Burdett-Coutts, the Archbishop of Canterbury, the Lord Chancellor, and others. Later on, when other opportunities became general, Mr. Busbridge relinquished the work he had so ably carried on for so many years, and devoted his remaining years to other activities. He was a Freemason and a member of the Pattison Lodge, Plumstead. He was one of the founders, and for many years a member of the committee, of the Woolwich and Plumstead Cottage Hospital, and, since its reorganisation as a corporate institution, has been one of its governors. He was also for many years a director of the Modern Permanent Building Society and a member of the Borough of Woolwich Chamber of Commerce.

THE LATERAL PRESSURE AND RESISTANCE OF CLAY, AND THE SUPPORTING POWER OF CLAY FOUNDATIONS.*

By ARTHUR LANGTRY BELL, B.A., B.E.,
M.Inst.C.E.

This paper opens with a reference to the difficulty to be anticipated in attempting to estimate the lateral pressures and resistances of clay, its constitution and properties being obscure. It is pointed out that the engineer is not interested in the complex problems which attract the attention of the physicist, but would be content with a practical, simple, and sufficiently correct method of estimating the pressures and resistances exerted by clay, so far as these affect the design and stability of structures. Published information is unfortunately insufficient to aid an engineer when confronted in practice with problems calling for a precise knowledge of the matter. He cannot hope to build a safe structure at the least cost unless he can make some reasonably accurate estimate of the forces with which he has to deal. Owing to reasons which appear later in the paper, the accepted theories of earth-pressure do not afford him much assistance. There are two theories of earth-pressure ordinarily used in English practice—Coulomb's and Rankine's. Both these theories apply to "a loose granular mass"—a definition which cannot possibly include undisturbed clay. Both also presuppose a knowledge of the angle of repose. The textbooks in current use give angles of repose for clay varying from 1deg. to 45deg., and observation of the material itself is of little value when selecting the angle to be used for calculations. Widely different results will be obtained according to the angles chosen. The results of calculations by these methods are also found to be at variance with observed facts. In the author's view the lack of agreement is due not so much to error in the existing theories as to a misapprehension as to the extent of their applicability. It is the purpose of the paper to bring before the members of the Institution an extension or modification of Rankine's theory which, when applied to clay, yields results more closely in accordance with fact and observation. A short description is given of the monolith foundation work at Rosyth Dockyard, as it was in connection with this work that the investigation which forms the subject of the paper was made. As the work of founding the monoliths proceeded, Rankine's formulas were duly applied to the different cases which arose; but in view of the doubt as to the applicability of the formulas to clay, and as to the correctness of the assumed angles of repose, the results were regarded rather as aids to practical judgment than as actual and reliable solutions of the problem of stability. A search through all available records did not yield much information of value or furnish a theory of clay pressure. Practical experience with tunnels and embankments appeared to indicate that the pressures exerted by clay resembled those due to a heavy fluid. This view is supported by a quotation which is made from a previous contribution by the late Sir George H. Darwin. The search revealed a high percentage of failures in work constructed in clay.

The broad conclusions to which the investigation led were that there was no available theory of earth-pressure which, when applied to clay, would command the general confidence of engineers. There were no fixed rules of practice, and there were grave differences of opinion as to what intensities of pressure could safely be placed upon clay foundations. Experiments were undertaken with a view to throwing further light upon the question. The first experiments described were made in a small testing cylinder 8in. in diameter, fitted with gauges at the ends and sides. The results are given of a few tests with this apparatus; but the author does not regard them as having much value. Up to this point, following established

custom, it had been thought that, however difficult it might be to find the true angle of repose for clay, it might be possible by experiment, or as the result of experience, to hit upon an angle which, when introduced into the generally recognised formulas, would give correct results. Suspicions were now felt that the root of the difficulty lay deeper, and that the true reason why Rankine's and Coulomb's theories were not applicable to clay was because clay did not conform to the law of resistance to shear which forms the initial basis of both those theories. Rankine expresses the primary law upon which his theory is based in the following words: "The resistance to displacement by sliding along a given plane in a loose granular mass is equal to the normal pressure exerted between the parts of the mass on either side of that plane multiplied by a specific constant." The symbolical expression of this law is

$$q = p_n \mu = p_n \tan. \phi,$$

p_n representing the intensity of normal pressure on the plane of shear, and q the intensity of resistance to shear on the same plane. μ the "specific constant" is equal to $\tan. \phi$, ϕ being the angle of repose. If it could be shown that clay failed to comply with this primary condition, then it seemed clear that formulas deduced from this condition were inapplicable to clay. To carry out the desired tests another apparatus was made, consisting essentially of a vertical

advancing pressure the resistance to shear increased in proportion to an angle α — α being the inclination of the straight line to the horizontal axis. Stated symbolically, the law to which clay conformed—so far as its shearing properties were concerned—was found to be—

$$q = k + p_n \tan. \alpha,$$

q representing the intensity of resistance to shear, p_n the intensity of normal pressure upon the plane of shear, and k the intensity of resistance to shear under zero pressure. The law stated above becomes identical with Rankine's if k be taken as zero and α as the angle of repose. To make clear the state of stress and of resistance within a body subjected to external pressure, curves are shown illustrating the intensities of stress and resistance in sand and in clay. From these diagrams and by a simple mathematical proof it is shown where the plane of rupture occurs both in sand and in clay. The position of the plane of rupture ascertained in this manner is found (in the case of sand) to be identical with that deduced in a different way by Coulomb. Having determined the position of the plane of rupture in clay, the author next proceeds, by considering the equilibrium of minute masses of clay in contact with the wall, to deduce formulas for the pressure and resistance of clay. The deduced formulas are then compared with Rankine's in the following table:—

	Rankine.	The Author.
p_1 = intensity of active pressure on back of wall at any depth, h —	$w h \left(\frac{1 - \sin. \phi}{1 + \sin. \phi} \right)$	$w h \tan.^2 \left(\frac{\pi - \alpha}{4} - \frac{\alpha}{2} \right) - 2k \tan. \left(\frac{\pi - \alpha}{4} - \frac{\alpha}{2} \right)$
r_1 = maximum intensity of horizontal resistance of material in front of a wall at any depth, d —	$w d \left(\frac{1 + \sin. \phi}{1 - \sin. \phi} \right)$	$w d \tan.^2 \left(\frac{\pi + \alpha}{4} + \frac{\alpha}{2} \right) + 2k \tan. \left(\frac{\pi + \alpha}{4} + \frac{\alpha}{2} \right)$
p_2 = minimum permissible intensity of downward pressure on foundation at heel of wall (depth H)—	$w H$	$w H \tan.^4 \left(\frac{\pi - \alpha}{4} - \frac{\alpha}{2} \right) - 2k \tan.^3 \left(\frac{\pi - \alpha}{4} - \frac{\alpha}{2} \right) - 2k \tan. \left(\frac{\pi - \alpha}{4} - \frac{\alpha}{2} \right)$
r_2 = maximum permissible intensity of downward pressure on foundation at toe of wall (depth D)—	$w D \left(\frac{1 + \sin. \phi}{1 - \sin. \phi} \right)^2$	$w D \tan.^4 \left(\frac{\pi + \alpha}{4} + \frac{\alpha}{2} \right) + 2k \tan.^3 \left(\frac{\pi + \alpha}{4} + \frac{\alpha}{2} \right) + 2k \tan. \left(\frac{\pi + \alpha}{4} + \frac{\alpha}{2} \right)$

cylinder 3in. in diameter and about 10in. high. Fitting into the upper end was a plunger which could be weighted on top, so as to compress the clay placed within the cylinder below it. Arrangements were made whereby the clay (while under pressure in a vertical direction) could be sheared through horizontally. The vertical load upon the clay and the pull required to shear through the clay being both known and capable of variation at will, it is possible with this apparatus, by making successive tests with different specimens of the same clay placed under varying degrees of compressive strain, to determine the law which governs the relation between the ultimate, shearing resistances and the normal pressures on the planes of shear. Experiments made with sand gave results closely in accordance with Rankine's law, as stated above. It was found that no kind of clay complied with this law. According to Rankine's law, where there is no pressure there is no resistance to shear; but in all cases clay was found to resist shear where the pressure was zero. The rate of increase of shearing resistance with advancing pressure was found not to be so great as would be inferred from Rankine's law, adopting the angles of repose ordinarily current in practice. It was found that when plotted in diagram form (with equal horizontal and vertical scales) the results with clay could be represented, with reasonable accuracy, by straight lines. These lines did not, however, pass through the origin (as would be the case in material complying with Rankine's law). In all cases they cut the vertical axis which passes through the origin at a distance k from the origin, and with

These formulas suffice for the design of retaining-walls in clay, the surfaces being assumed horizontal: the paper is limited to the consideration of this case only. If k be taken as zero and α equal to ϕ , the new formulas (with one exception) become identical with Rankine's. The exception referred to (namely, the minimum permissible intensity upon a foundation) is then discussed, and reasons are given for adopting the newer formula. It is also pointed out that there is another essentially practical reason for the final abandonment of the value wH —namely, that, by what appears to be the general consent of engineers, it has, in fact, been already abandoned. It is questionable whether any large retaining-wall has been built in accordance with it. It was thought desirable to supplement the theoretical work by making direct observations of pressure within a large mass of clay. The four diaphragm gauges used in the previous cylinder tests were built into the side of one of the monoliths, being arranged in two pairs. The gauges of the lower pair were fixed side by side at a height of 10ft. above the cutting edge of the monolith shoe, while directly above them, and 12ft. 8in. higher up, were the two remaining gauges. By adopting this arrangement it was intended that each gauge-reading should constitute a check upon the reading of that beside it; while the readings of the lower pair at any depth would be checked at a later date by those of the upper pair when the latter reached the same point. The actual uncorrected readings of all four gauges, taken from time to time, as opportunities offered during sinking, are shown by diagrams, to—

* Abstract of a paper read before the Institution of Civil Engineers, Jan. 12, 1915.

gether with a section of the strata through which the monolith was sunk. Unfortunately, one pair of gauges was spoilt by leakage, and owing to damage by blasting the records obtained from the other pair were insufficient to confirm completely the theoretical conclusions previously obtained. But so far as the records went they appeared to be in reasonable conformity with the theoretical position discussed in the paper. The laying of too much stress upon the few readings obtained is deprecated, and the practicability of making effective use of the new formulas is discussed. It is pointed out that it is not easy, when designs are in progress, to obtain clay in its virgin state, and from considerable depths below the surface, for the purpose of making tests, and in certain methods of construction—the sinking of monoliths, for example—the strata are often never seen in their normal condition, even when the works are in progress. Further, the building of a new work may have, in the course of years, the effect of altering the condition of the strata which press upon the structure. What the extent of these changes will be, and whether they will be beneficial to stability or otherwise, will never be determinable by purely mathematical methods. If reasonably correct results are to be obtained, some measure of judgment must lend its aid towards the solution of the real problems of earth-pressure which occur in practice, as distinguished from the simplified and somewhat unreal problems with which theorists necessarily deal.

The paper concludes with the usual formal acknowledgments, and a tabular statement of average value of k and a , so far as present experience goes. The appendices include an independent proof by Professor Maurice F. Fitzgerald, yielding results identical with those obtained by the author by different methods.

AN AMERICAN TRANSLATION OF VITRUVIUS.*

Readers in this country desirous of completing their collections of Vitruvius may not unprofitably add this American translation thereto. It seems to have occupied much of the time and energy of Professor Morgan during the last years of his life; but the last four chapters of the tenth book were left untranslated, and the rendering thereof has been undertaken by Mr. Howard, who is also responsible for changes in the earlier part of the volume, involving mainly the adoption of simpler forms of statement or the correction of obvious oversights.

There are sixty-one illustrations, and the text followed is that of Valentine Rose in his second edition, published at Leipzig in 1899, the variations from which are, with a few exceptions which are indicated in the footnotes, in the nature of a return to the consensus of the manuscript readings.

Mr. Howard, in his preface, attempts no revival of the long discussion as to the date of Vitruvius, which has been assigned to various periods, from the time of Augustus to the early centuries of our own era. Prof. Morgan accepted the generally received view that Vitruvius wrote in the time of Augustus. Mr. Howard notes one bit of evidence for a date before the end of the reign of Nero, never before adduced. In Book VIII. 3, 21, the kingdom of Cottius is mentioned, which was made into a Roman province by Nero, and it is improbable that any subsequent Roman writer referred to it as a kingdom. It is, of course, true, as Mr. Howard is aware, that the name depends on an emendation, which has been generally accepted since it was first proposed in 1513.

That the literary merits of Vitruvius were not conspicuous few English readers need be told. Some of his peculiarities and crudities,

we are informed, Professor Morgan purposely imitated, because of his conviction that a translation should not merely reproduce the substance of a book, but should also give as clear a picture as possible of the original, of the author, and of the workings of his mind. Certainly any attempt is avoided to treat the language of Vitruvius as though it were Ciceronian, although Professor Morgan expresses the utmost confidence in his author's sincerity, and in the serious purpose of his work.

COMPETITIONS.

DUNDALK.—The Louth County Council propose to invite competitive plans from architects for their proposed new offices at Dundalk. Prof. W. A. Scott, A.R.I.B.A., A.R.H.A., of Mountjoy-square, Dublin, will be the adjudicator.

LUTON. The Bedfordshire County Council, when advertising for architects to apply for an opportunity of submitting designs for the new Girls' Secondary School at Luton, offered each of the eight chosen to be competitors an honorarium of ten guineas, and, accordingly, the following gentlemen have just been elected to send in plans: Messrs. J. R. Brown and Son, Luton; Mr. Alfred W. S. Cross, M.A., V.P.R.I.B.A., New Bond-street, W.; Messrs. J. H. W. Hickton and H. E. Farmer, F.R.I.B.A., Walsall; Messrs. Buckland, Haywood, and Farmer, F.R.I.B.A., Birmingham; Mr. Arnold Mitchell, F.R.I.B.A., Hanover-square, W.; Messrs. J. A. Gotch, F.S.A., and Sanders, Kettering; Messrs. Franklin and B. C. Deacon, F.R.I.B.A., Luton; and Messrs. Sharman and Archer, Wellingborough.

MACCLESFIELD HOUSING SCHEME.—Members of the Society of Architects are requested not to take part in this competition without first ascertaining that the conditions have been approved by the Society, which is in negotiation with the promoters, with a view to securing certain amendments.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Mr. Leslie Patrick Abercrombie, of the University, Liverpool, a candidate for the special examination, has been awarded the mark of distinction for his thesis on "The Development of the Plan and Architectural Character of three European capitals—Paris, Vienna, and Brussels."

Mr E. P. Hooley has resigned the appointment of county surveyor of Nottinghamshire, having accepted a commission in the 8th Reserve Battalion of the Sherwood Foresters, now stationed at Newark.

The Local Government Board have sanctioned the agreement between the Rochester Corporation and the Mid Kent Water Company for the latter to supply water in bulk to replace the present unsatisfactory supply from the Corporation's own well at Strood.

Erected at a cost of £14,000, the new police-court for West London was opened to the public on Monday. The court has been built practically on the site of the old court. The new court has a spacious entrance-hall, with the various police-offices opening out of it, while the court itself is panelled in oak, and has a writing-desk in the dock. Mr. J. Dixon Butler, F.R.I.B.A., is the architect.

Sir George Askwith presided at a conference held on Monday in the North British Station Hotel, Edinburgh, of architects, surveyors, and members of the Scottish National Building Trades Federation and Allied Trades. The subject of the conference was modes of measurement, and particularly preliminary rules applicable to all trades throughout Scotland. Further meetings will be held for the purpose of establishing a mode of measurement for joiner work and for other trades.

According to the return for 1913-14 of tramways and light railways issued on Monday, the total length of tramways on public roads open for traffic in the United Kingdom is 2,703 miles. In 1912-13 the route mileage worked by electric traction was 2,546 miles out of a total of 2,662, whilst in the year under review it was 2,595 miles out of 2,703, the remainder being 4 per cent of the total length of line. Out of the 279 undertakings, 171 belonged to local authorities, and 108 to companies or other parties.

Our Illustrations.

THE CUNARD BUILDING, LIVERPOOL.

This important addition to the architecture of Liverpool is being erected for the head offices of the Cunard Line. The building is designed after the style of the Roman Renaissance palace, and is to be carried out entirely in reinforced concrete, faced with Portland stone. The architects are Messrs. Willink and Thicknesse, 14, Castle-street, Liverpool. The consulting architects are Messrs. Mewes and Davis, of Paris and London, and the contractors are Messrs. W. Cubitt and Co., of London.

PRIVATE CHAPEL, APSLEY PADDON, OXFORDSHIRE.

This little Catholic chapel is arranged so that it can be used as a parish-hall later on, when the church is built. The work generally was done by Messrs. Benfield and Loxley, of Oxford. The baldachino, etc., in Italian walnut, was carved by Mr. Esmond Burton. The architect is Mr. Ernest Newton, A.R.A., P.R.I.B.A.

A SMALL HEADQUARTERS AND DRILL-HALL FOR A COUNTRY TOWN.

(The description of these designs will be found in our Referee's report on p. 93.)

At Nottingham an extension of the corporation's electric tramways to the suburb of Arnold has just been opened.

Mr. Robert Hall Couzens, of York, has been appointed assistant surveyor in the surveyor's department of the West Riding County Council.

The Local Government Board have sanctioned the borrowing of £10,000 by the town council of Wexford, for the provision of workmen's dwellings.

Mr. Edward Evans, of Lower Camden, Chislehurst, and of Lisford-street, Peckham, builder, who died on Oct. 12, left £14,589 gross, with net personally nil.

A new municipal building is to be erected in the city of Galveston, Texas, from plans prepared by Messrs. S. D. Hill and Co., architects, Sumpter Building, Dallas.

At a meeting of the council of the Royal Society of Painter-Etchers and Engravers, Mr. F. H. Townsend, Mr. Neils M. Lund, and Mr. S. Tushingham were elected Associates.

Mr. A. H. Waller, formerly deputy town engineer of Durban, has been appointed to the post of town engineer of Bulawayo for a period of twelve months, subject to three months' notice. The salary is £800 a year.

At their last meeting, held at Chelmsford, the Essex County Council decided to widen the London-road, Harwich, at an estimated cost of £1,650, and to carry out highway improvements at Orsett and in Colchester at outlays of £2,124 and £1,370 respectively. The council also adopted revised plans for enlarging and altering the sanatorium at Black Notley at an estimated cost of £1,855.

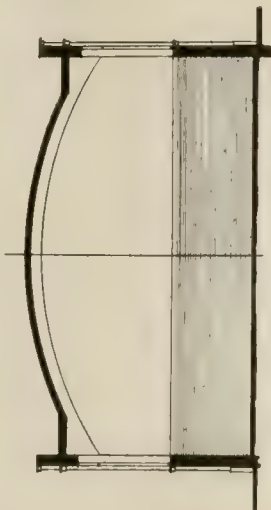
A Local Government Board inquiry was held before Mr. F. O. Stanford, A.M.I.C.E., at Albion House, Ramsgate, last week, concerning the application of the corporation for sanction to borrow sums amounting to £6,783. Of these sums, £1,339 was in respect of the extension of bathing-boxes on the eastern foreshore, and £5,444 was for works of fencing, the provision of public sanitary conveniences adjoining the East Cliff concert enclosure, on the East Cliff extension, and in Forge-alley, High-street; for other works of street-improvement in High-street, Queen-street, and Royal-parade; and the West Cliff shelter.

At the meeting of Newcastle-on-Tyne City Council last week, a report was presented from the housing committee relative to a proposed housing scheme at St. Lawrence-square and Walker-road. The committee recommended the erection on the easterly site in Walker-road of self-contained houses in substitution for the twelve dwellings originally proposed. Of the houses proposed, six will have four rooms and a bathroom, and one three rooms and a bathroom. It is proposed that the six larger houses should be let at 8s. 3d. per week, and the remaining one at 7s. 3d. per week. The effect of the alteration is to increase the estimated annual deficiency of £80 7s. 1d. to £87 9s. 3d.

* Vitruvius: The Ten Books of Architecture. Translated by MORRIS HICKY MORGAN, Ph.D., LL.D., late Professor of Classical Philology in Harvard University. With illustrations and Original Designs prepared under the direction of HERBERT LANGFORD WARREN, A.M., Nelson Robinson Professor of Architecture in Harvard University. Edited by ALBERT A. HOWARD. Published in England, on behalf of the Harvard University Press, by the Oxford University Press, Amen-corner, London, E.C. 15s. net.

PLACED FIRST

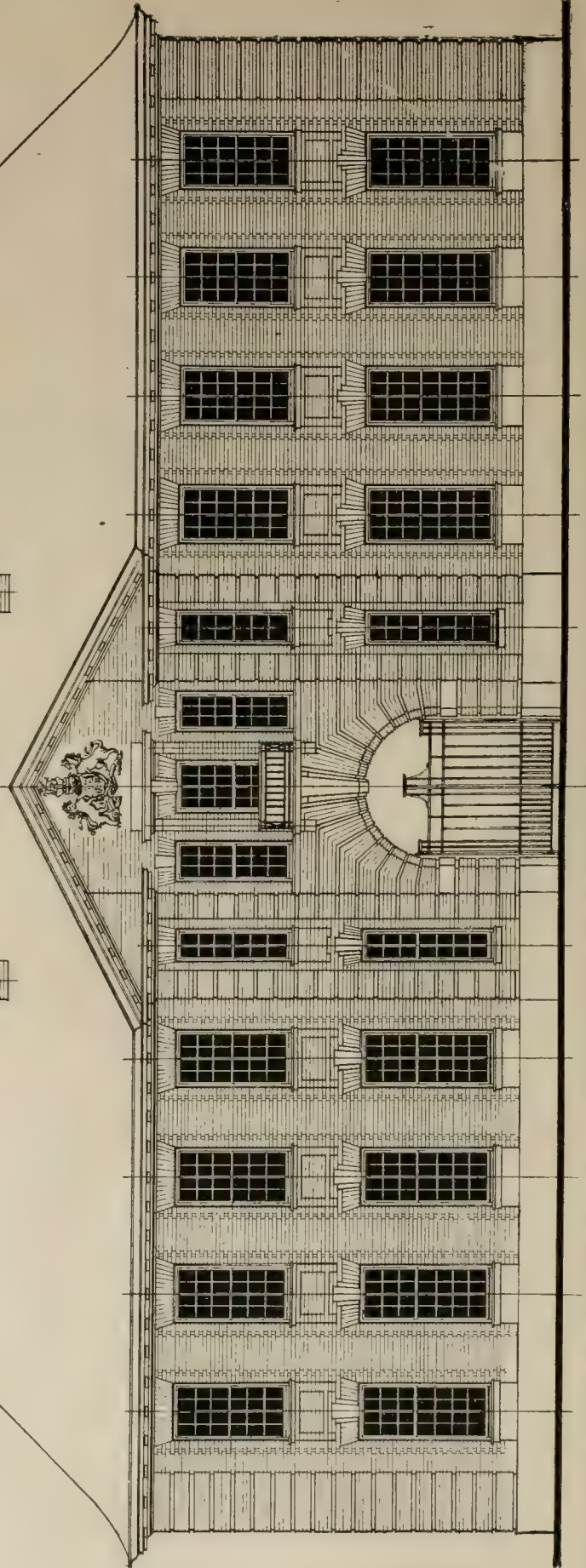
B. N. D. C.
A SMALL HEADQUARTERS BUILDING
INCLUDING A DRILL HALL.
BY "PENWITH"



SECTION

SIDE ELEVATION

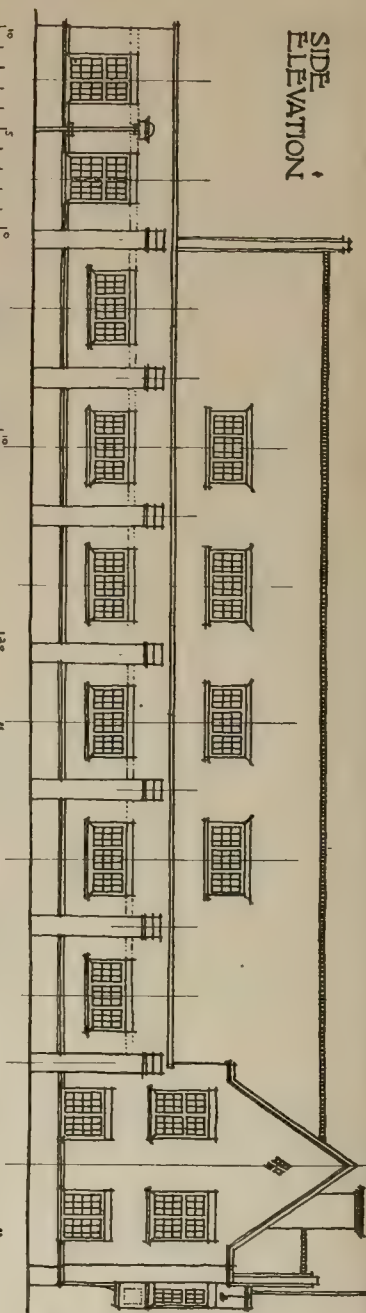
DETAIL OF FRONT



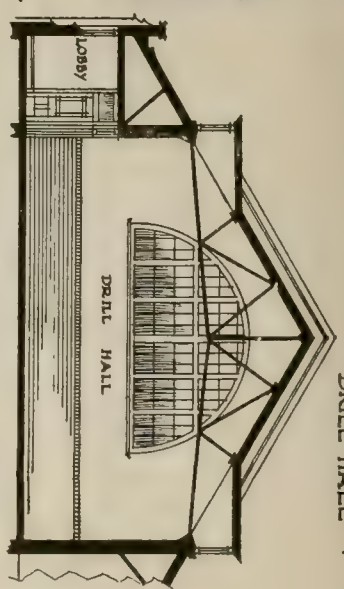
"BUILDING NEWS" DESIGNING CLUB: A SMALL HEADQUARTERS AND DRILL-HALL FOR A COUNTRY TOWN. DESIGN PLACED FIRST, BY "PENWITH."



SIDE ELEVATION



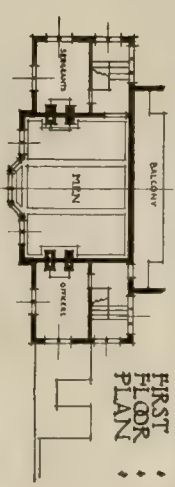
THIRD FLOOR
DRILL HALL



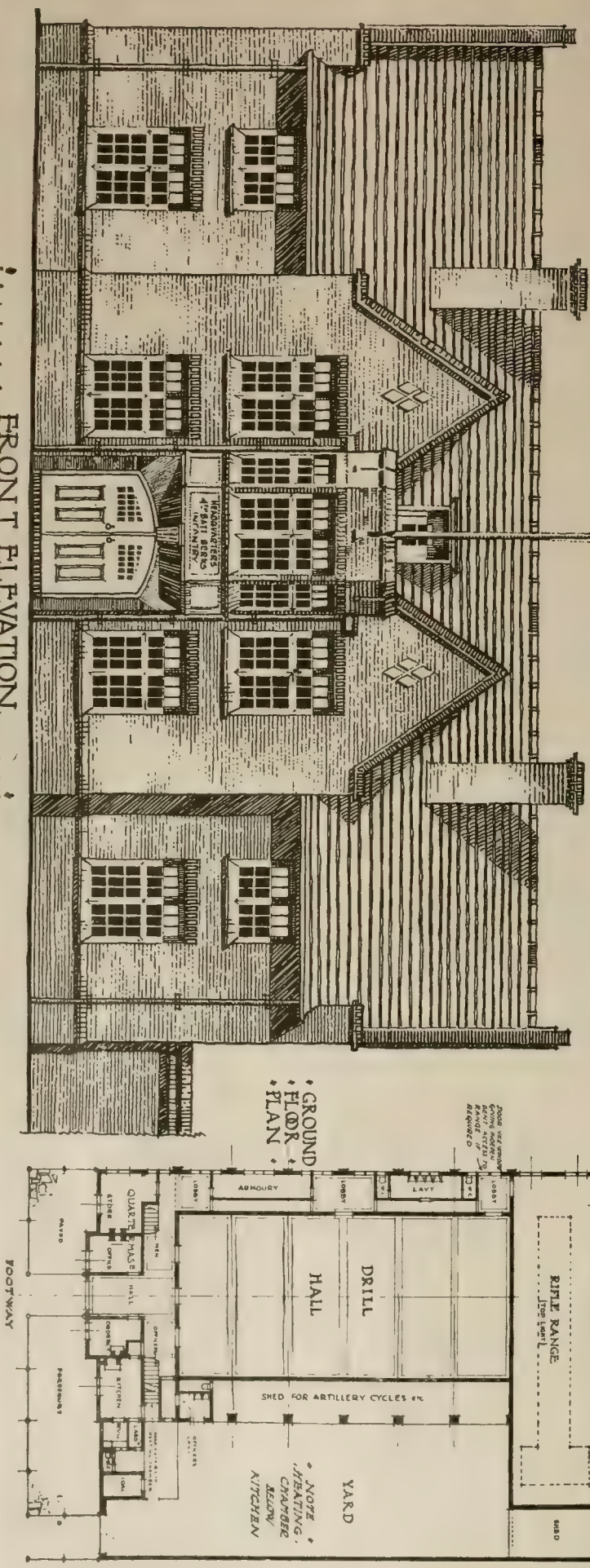
FRONT ELEVATION
SIDE ELEVATION ETC
PLANS

• SCALES IN FEET •

“BUILDING NEWS DESIGNING CLUB”
• • • • • SMALL HEADQUARTERS BUILDING • • • • •
• • • • • *September Morn* • • • • •
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• GROUND
• FLOOR
• PLAN •



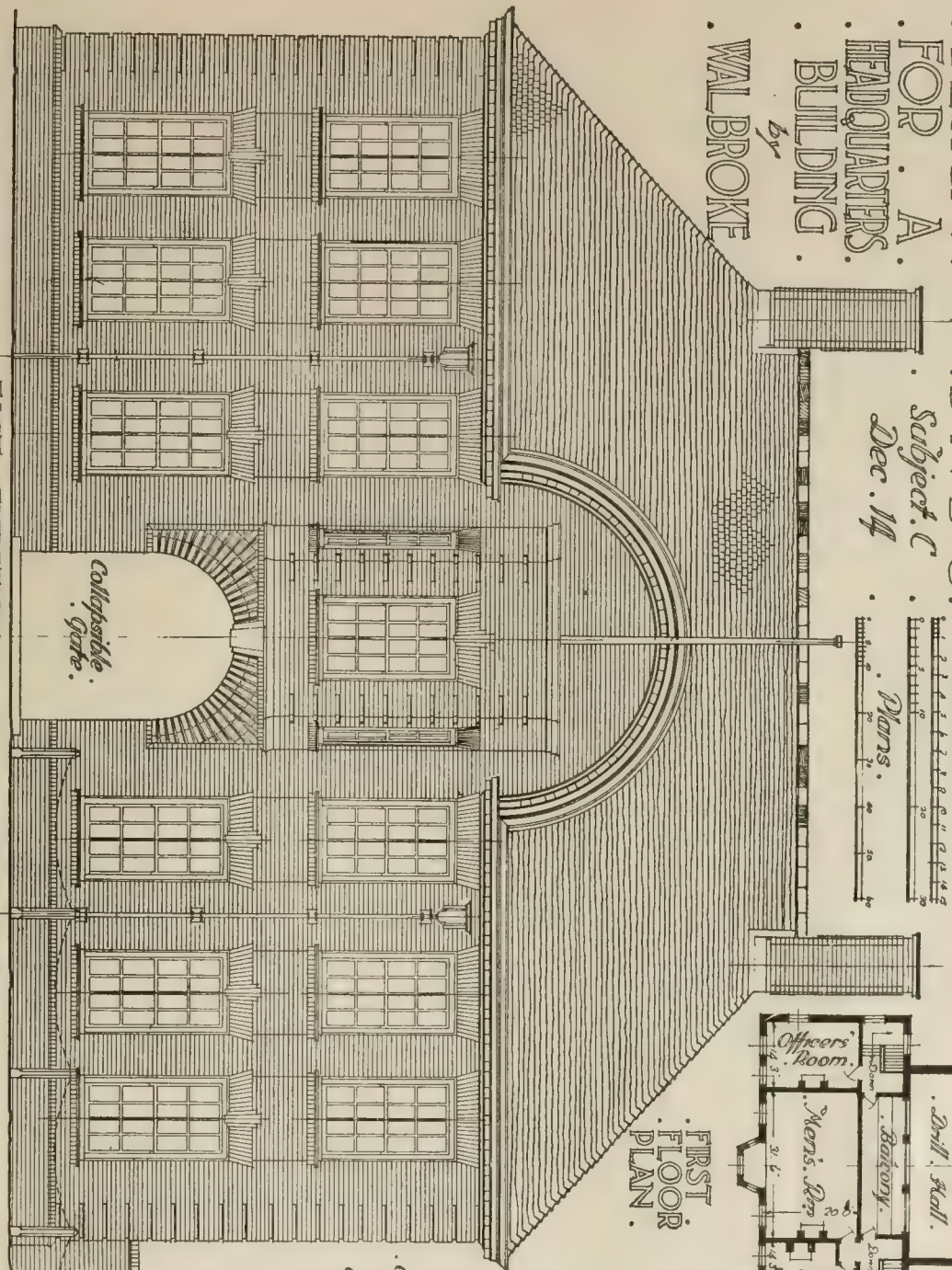
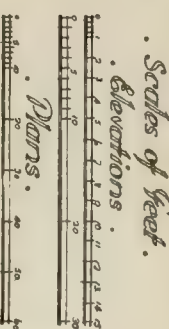
• • • • • FRONT ELEVATION • • • • •

“BUILDING NEWS” DESIGNING CLUB: A SMALL HEADQUARTERS AND DRILL HALL FOR A COUNTRY TOWN.

• Designs by “SEPTEMBER MORN” (Placed Second) and “WALBROKE” (Placed Third).

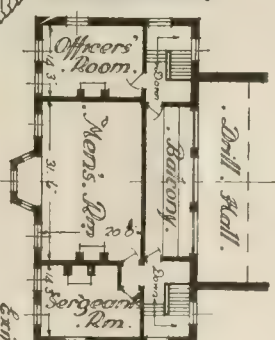
DESIGN
FOR A
HEADQUARTERS
BUILDING
by
WALBROKE

BND C
Subject C
Dec. 14



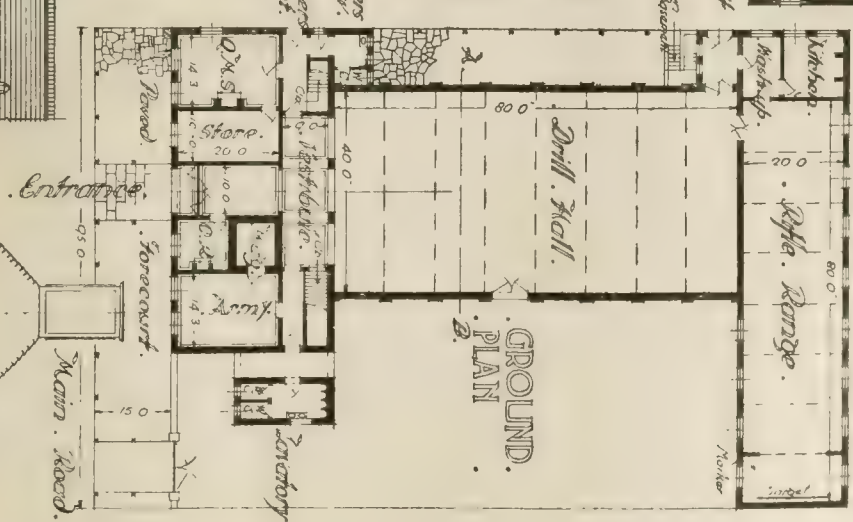
EAST ELEVATION.

FIRST FLOOR PLAN.



Return Road.

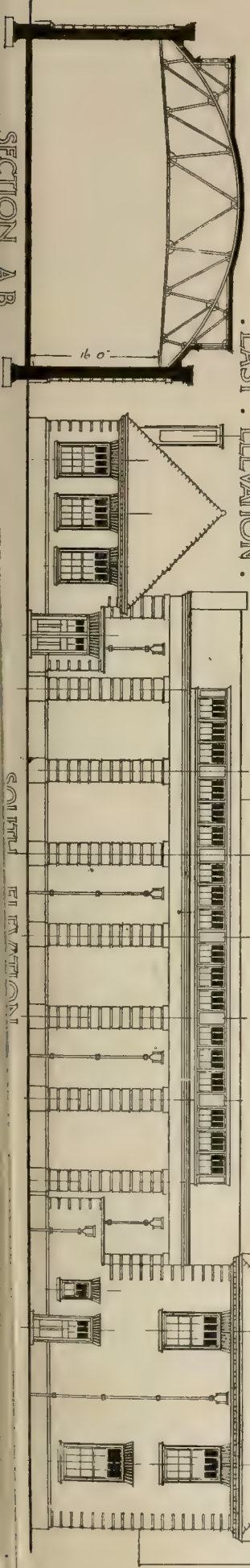
GROUND PLAN.



PLACED THIRD

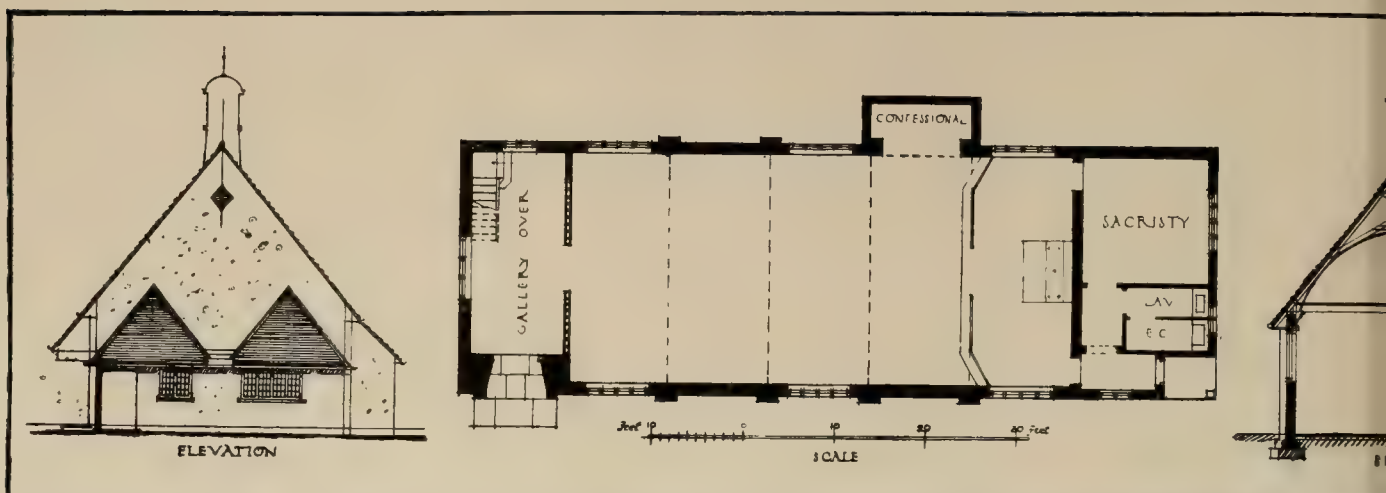
SECTION A-B

CUTTED ELEVATION



103-106



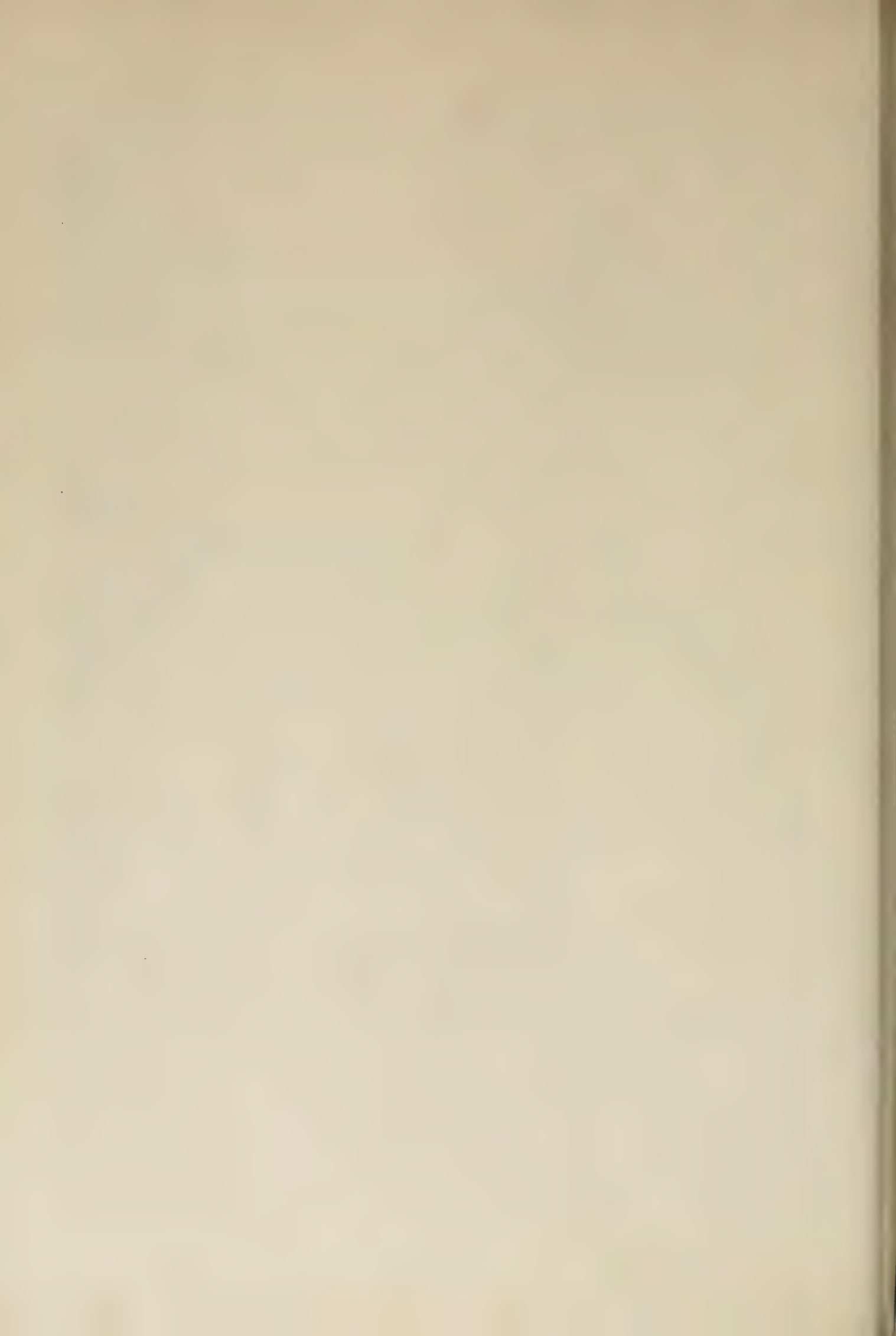


Thomas Lewis, Ltd., Photo.

PRIVATE CHAPEL, APSLEY, PADDON, OXFORDS

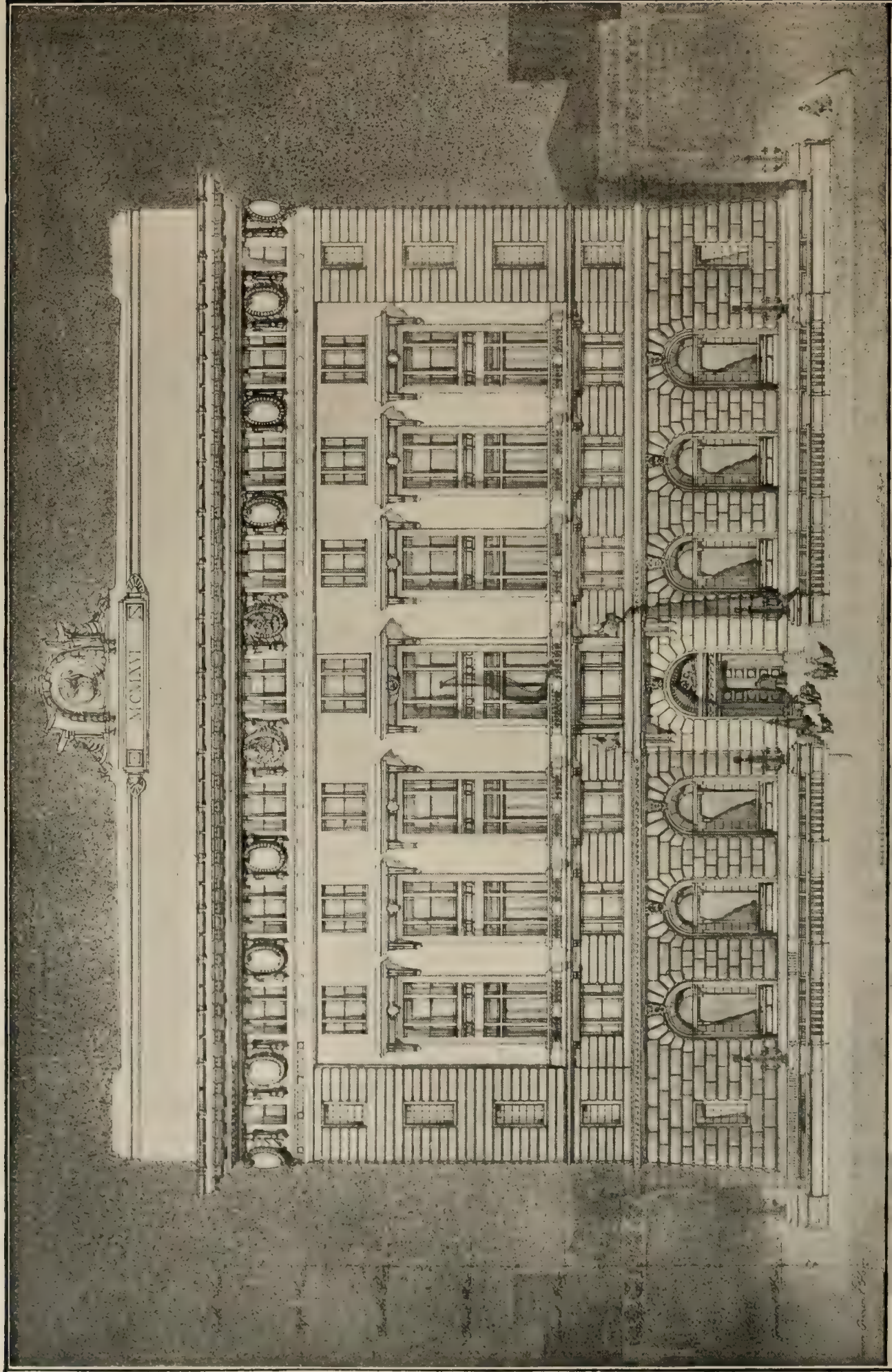


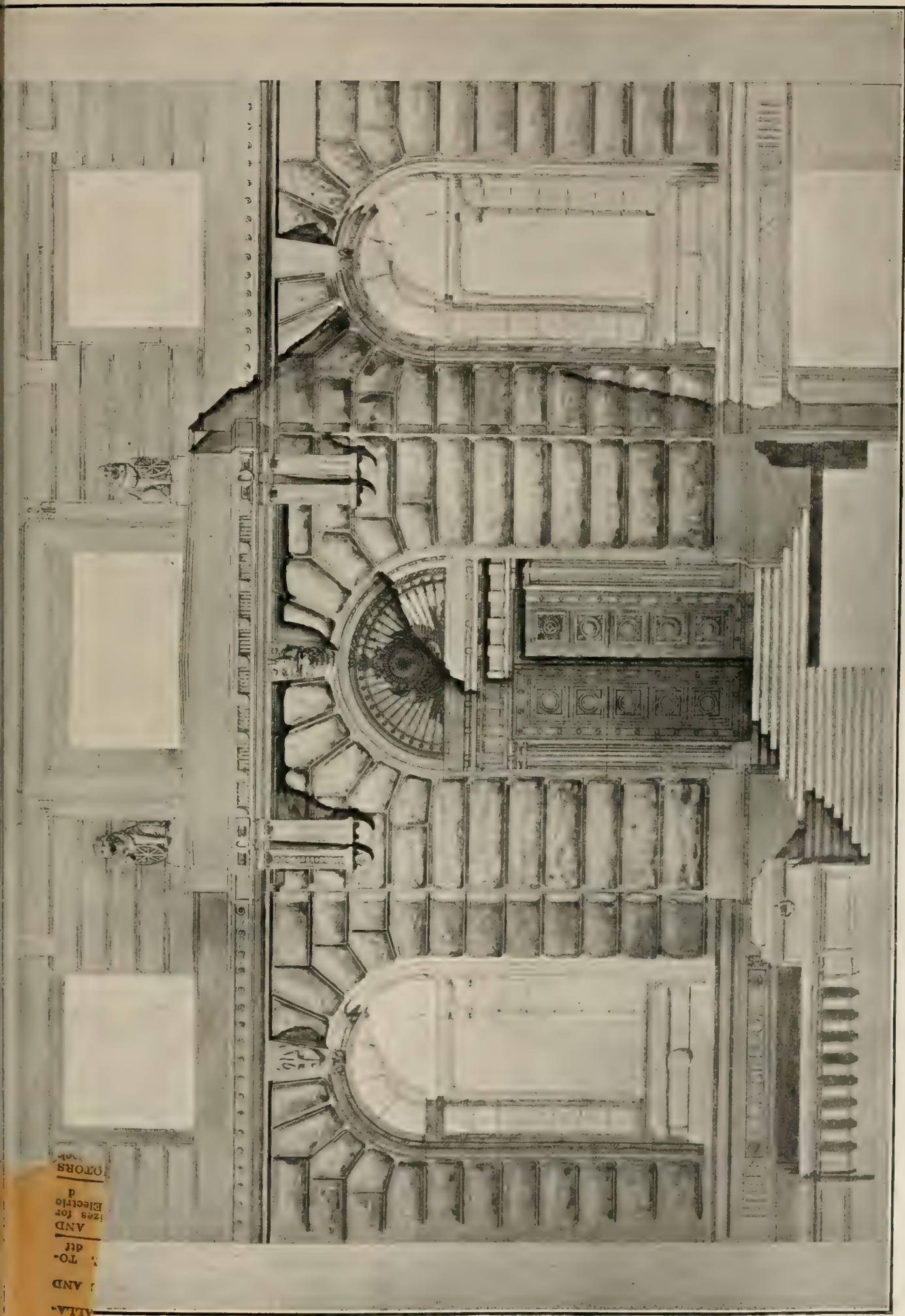
RE.—Mr. ERNEST NEWTON, A.R.A., P.R.I.B.A., Architect.



107-110.





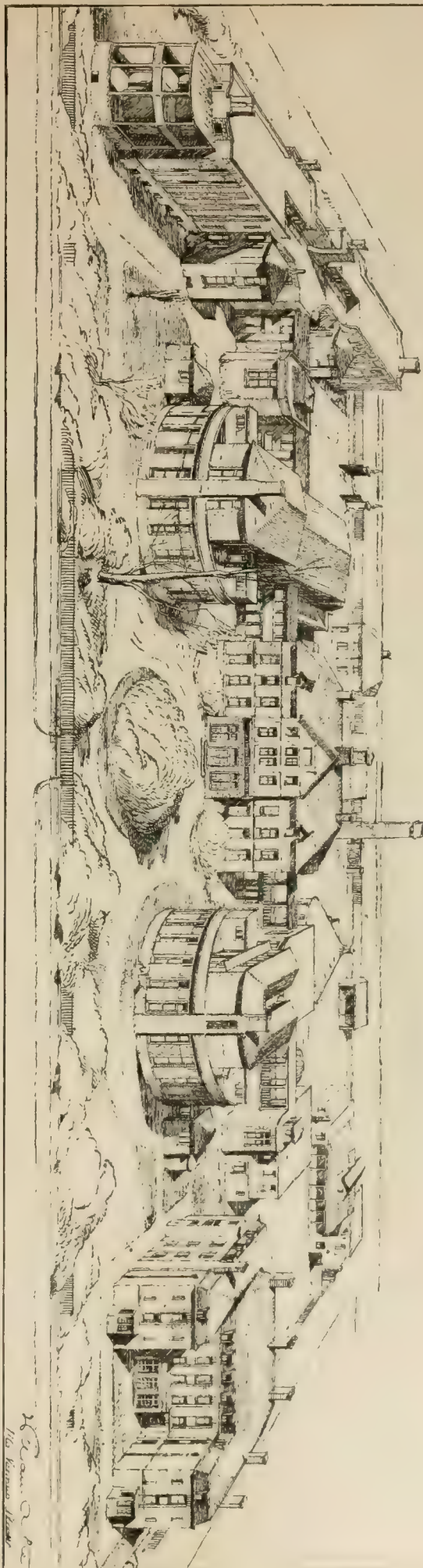


THE CUNARD BUILDING, LIVERPOOL: ENTRANCE FRONT.—Messrs. WILLINK and THICKESSE, F.R.I.B.A., Architects.

(Messrs. MEWES and DAVIS, Consulting Architects.)

VICTORIA HOSPITAL : BURNLEY

Architect: F.R.I.B.A.



EXTENSION OF THE VICTORIA HOSPITAL, BURNLEY: SELECTED DESIGN.

MR. WILLIAM A. PIER, F.R.I.B.A., Architect.

EXTENSION OF THE VICTORIA HOSPITAL, BURNLEY.

(SELECTED DESIGNS.)

A limited competition has just been settled for the extension of the Victoria Hospital at Burnley. Ten sets of plans were submitted by the following firms (the assessor was Mr. H. Percy Adams, F.R.I.B.A.): First, Mr. William A. Pier, London; second, Messrs. Hitchon and Pickup, Burnley, premium £75; third, Messrs. Taylor and Shuster, Oldham, £50; fourth, Mr. T. H. Vowles, Burnley, £25. The other competitors were Messrs. John Brooke and Elcock, Manchester; Mr. Hugh Healey, Manchester; Mr. Thomas A. Pole, London; Mr. William A. Quarby, Burnley; Mr. A. Saxon Snell, London; and Mr. Arthur Worrall, Wolverhampton. Mr. Arthur Marshall (Nottingham) and Messrs. Keighley (Barnsley) were also invited, but did not send in designs. All the plans were to be on view at Burnley on 21st and 22nd inst. to the competitors, and to the public at a later date. We publish a view of the selected design. The cost of the works is approximately fixed at £25,000. The additions comprise new wards, new nurses' home, new operating theatre, new laundry, and other works, all being made to conform with the character

of the existing buildings. The new accommodation will contain about fifty-six beds for men and women, and more space for administration is included in the extensions. The cost of furnishing is not comprised in the above estimate. The board of management of the Victoria Hospital held a meeting last Friday at Burnley Town Hall, when the above awards were made known, and the report of the assessor was adopted.

CHIPS

As an appreciation of the services rendered by him, Mr. Brookes, the late survivor to the Cornwall County Council, has been presented with a case of cutlery by the members of the county council highways and main roads committee.

A new council school, built in Cambridge-street, Newcastle-on-Tyne, at a cost of £11,000, has been formally opened. The architect was Mr. J. H. Morton, of South Shields, and the contractors were Messrs. S. Sheriff and Son, of South Shields.

At a meeting of the Worcestershire Standing Joint Committee on Saturday it was reported that tenders had been received for the proposed new police-station at Droitwich, and that there was a serious difference of £2,000 between the estimate and the lowest tender—about £6,000. It was agreed to allow the matter to stand over until after the war.

The following members of the Architectural Association of Ireland have, says the *Irish Builder*, received commissions in the Army: Mr. C. H. Mitchell, M.R.I.A.I., 7th Royal Irish Fusiliers; Mr. T. Sheppard, 11th Royal Worcestershire Regiment; Mr. Mitchell, the eldest son of the late Mr. W. M. Mitchell, F.R.I.B.A., President of the Royal Institute of the Architects of Ireland.

The official summary of the returns of unoccupied houses and shops in Liverpool shows a considerable decrease in the number as compared with the previous two years. For instance, the total of empty shops last year is given as 772, as against 810 in 1913, and 1,101 in 1912. In regard to houses, there were 2,270 unoccupied last year, 2,738 in 1913, and 4,630 in 1912. Houses in course of erection which are roofed are tabulated as 72 last year, 207 in 1913, and 276 in 1912.

The greater part of the urban district of Colwyn Bay is drained by the system constructed under the powers of the local Act of 1906; but the portion of the district on the west side of Flagstaff Hill and Bryn Erynn, in the Moelddu Valley, has yet to be joined up with the main drainage system. A scheme for effecting this has been devised, the cost being estimated at £11,000, and a Local Government Board inquiry was held on Tuesday, before Mr. A. G. Drury, with respect to the application for sanction to borrow this amount. Mr. Robert Green, C.E., the engineer of the scheme, and Mr. W. Jones, engineer to the urban district council, explained the plans.

The borough council of Deptford have under consideration a recommendation to increase the salary of Mr. J. Sutcliffe, borough surveyor, to £450 per annum.

The term of the Slade Professorship of Fine Art at Cambridge University expires on February 20. Professor E. S. Prior, A.R.A., F.R.I.B.A., who has so successfully organised the new school of architecture in the University, is offering himself for re-election, and, if re-elected, will hold the professorship for life, or until resignation.

At the last meeting of the town council of Penzance, the quay committee submitted a plan and estimate for strengthening the Western Quay abutting on the dock, providing stores for the shipment of china clay, at a cost of £2,500; and recommended that tenders be invited for carrying out the work. The plan was approved, and the recommendation adopted.

The corporation of Southampton will consider at their next meeting plans submitted by the borough engineer for the provision of fifty houses, in blocks of four and six, as an instalment of the scheme for the development of the Hampton Park site. The housing committee recommend that alternative tenders be invited for building either twenty-four or fifty houses, in accordance with the plans and specifications of the borough engineer, at a rental not exceeding 7s 3d a week inclusive, and that the borough engineer be directed to submit plans and report for the erection of eighteen four-roomed houses in blocks of six.

OBITUARY.

Mr. Charles H. Rutan, of the firm of Shepley, Rutan, and Coolidge, architects, Boston, Mass., died at his home in Brookline on December 16. Mr. Rutan was born in Newark, N.J., in 1851. He became identified in 1870 with the firm of Gambrell and H. H. Richardson. He remained with the latter until his death in 1886, when he formed the partnership with Mr. Shepley and Mr. Coolidge, which continued until now terminated by Mr. Rutan's death.

Mr. George Charnock, Laurel Bank, Halifax, one of the largest contractors and builders in Yorkshire, was found dead, with terrible injuries to his head, in his office in Back-Moorfield-street on Wednesday morning. By his side was a double-barrelled gun with one barrel discharged. Trading as J. Charnock and Sons, he erected public buildings in all parts of the county, and had carried out many contracts for the Government and railway companies. On Monday he filed his petition in bankruptcy. He was sixty-one years of age.

Mr. Carl Haag, R.W.S., the veteran painter in water-colours, died at his residence, Rother Thurm, Oberwesel-am-Rhine, Germany, on Sunday last, in his ninety-fifth year. After studying at Nuremberg and Munich, Mr. Haag took up painting in oils, working also in Rome; but on settling in England, in 1847, he confined his practice to the water-colour medium, in which he achieved great popularity. A drawing by him was exhibited at the Royal Academy in 1849, and from time to time up to 1881 he contributed architectural subjects and portraits—among the latter one of General Buettner, his father-in-law—to the Burlington House shows. He was elected in 1853 a full member of the Royal Society of Painters in Water-Colours, of which at the time of his death he was an honorary retired member. Mr. Haag travelled much in the Near East, and in Egypt, Syria, and the Holy Land. He executed several commissions for Queen Victoria and Prince Albert. Mr. Haag was Court painter to the Duke of Saxe-Coburg and Gotha. After his marriage in 1866 to Ida, only daughter of General Buettner, he built himself a house and studio at Hampstead. Under his direction the well-known Red Tower at Oberwesel on the Rhine was restored.

The death is announced from Buenos Aires of Mr. Richard Soulbey Oldham, M.I.C.E., the engineer of the new harbour works at that port. Mr. Oldham, who was in his forty-sixth year, was educated at Owens College, Manchester, and served his apprenticeship under Sir Edward Leader Williams. From 1881 to 1894 he was an assistant on the Manchester Ship Canal, Warrington division, under Mr. O. G. Brooke, and later under Mr. W. Burch. From 1894 to 1901 he acted as assistant engineer to the Swansea Harbour Trustees, under Mr. A. O. Schenk. Here he assisted in the preparation of the contract drawings and estimates for an extension of the Prince of Wales Dock, two new entrances to the North Dock, a new entrance lock to the South Dock, and a swing-bridge, warehouses, timber jetties, and lock-gates, and was also engaged on three Parliamentary Bills. In 1901 the Harbour Trustees promoted a Bill in Parliament for the construction of a new dock. Mr. Oldham was engaged upon this work as chief assistant to the engineers, Messrs. P. W. Moir and A. O. Schenk, in the preparation of Parliamentary drawings and estimates, and on the subsequent contract drawings, specifications, and estimates. Mr. Oldham was appointed in 1903 resident engineer to the new King's Dock.

Mrs. Elizabeth Mary Bell, widow of Mr. Edward Ingress Bell, F.R.I.B.A., died on Friday last at her residence, St. Stephen's, Winchester-road, Worthing. Mrs. Bell, who was in her seventy-eighth year, only survived her husband by a little more than four months. The requiem mass was held at Our Lady of the Angels' Church, Worthing, on Tuesday morning, the interment being at Broadwater cemetery.

PROFESSIONAL AND TRADE SOCIETIES.

THE ARCHITECTURAL ASSOCIATION OF IRELAND.—The paper read by Mr. Arthur Hill, F.R.I.B.A., of Cork, before the Architectural Association of Ireland on Tuesday week was well timed—just as proposals for decorating the interior of the City Hall by frescoes below the dome are under consideration. Mr. Harry Allberry, A.R.I.B.A., president, occupied the chair. The lecturer, having pointed out that a sense of colour is inherent in the human race, and that there is every reason to believe that in early days the next step to building a dwelling was to paint it, referred to the rich colouring employed by the Egyptians in their tombs and temples, and to the painting by the Greeks in *tempora* on panel, and also in wax, known as the encaustic process. Mr. Hill proceeded to deal with the work of the Christian period, and traced the pictorial decoration of buildings through its two main forms of mosaic and fresco painting, the former waning as the latter became more popular. During the 13th century painting well deserved the title of "the handmaid of architecture," and an immense field was opened up for the artist. The four sides of even a plain rectangular room in a convent or a palace were treated with a complete scheme of mural decoration, glowing with colour and alive with interest. Passing to later times, the lecturer, with the aid of numerous lantern-slides, some of which were specially lent for the purpose by the Art Institute of Chicago, explained the development of modern pictorial decoration, many interesting examples of recent work in France and the United States being exhibited. A vote of thanks was proposed by Mr. G. G. Lynes, seconded by Mr. Page L. Dickinson, and carried with acclamation. Amongst subsequent speakers in the discussion were Messrs. James Ward, A.R.C.A., of the School of Art, L. O'Callaghan, and Hubert Briscoe. Reference was made to the numerous opportunities existing in Dublin for the decoration of public buildings in a manner which has been so successfully adopted on the Continent and in America, where the public libraries and law-courts are made interesting by the introduction of frescoes showing historic events in the life of the nation.

AUCTIONEERS AND ESTATE AGENTS AT EXETER.—Mr. Ashton, of Bradworthy, presided on Friday at the annual meeting at Exeter of the Western Counties Branch of the Auctioneers' and Estate Agents' Institute. He was supported by the Mayor of Exeter (Mr. J. G. Owen, J.P.), the president of the institute (Mr. J. T. Woolley, of Salisbury), Mr. Harris (organising secretary, London), and many local residents. The financial statement and secretary's report were adopted. Mr. W. O. Hosking was elected chairman, and Messrs. Whitton and Slee vice-chairmen. The following were appointed the committee: Messrs. W. Cox, Torquay; C. J. Hannaford, Chulmleigh; J. Kittow, Launceston; G. Elton Laing, Exeter; H. G. Loveys, Moretonhampstead; R. Manico, Plymouth; Howell Mabbett, Penzance; A. Bromley Sanders, Exeter; and W. J. Villar, Taunton. The branch again elected as hon. secretary Mr. Leonard Martin, who has joined the Cyclists' Corps of the New Army. The members lunched together at midday with the Mayor of Exeter.

THE FORUM ROMANUM.—In his lecture on Thursday in last week at the British Museum, Mr. Banister F. Fletcher described the plan of Ancient Rome on her seven hills, with the great Forum Romanum in the central valley. The Capitoline Hill dominated this public meeting-place on one side, and the Palatine Hill, with its Imperial palaces, on the other. The Forum Romanum was the heart of Roman civic life, and held much the same position as did the Acropolis in ancient Athens, only that, for the practical Roman, it included the commerce of the city, and was flanked by temples of the gods and courts of justice. Here political demonstrations were held, and from

the Rostrum orators addressed the populace on matters of State, and demagogues harangued the plebs and instilled discontent. Stately colonnades, spacious basilicas, and the majestic temples of a State religion all made a fitting setting for the activities of Roman citizens. Here the old Romans walked and talked, bargained, intrigued, and worshipped. But the city grew with its growing Empire, and successive emperors, eager to ingratiate themselves with the people, built other forums for the people which rivalled in size, but never eclipsed in importance, the old Forum Romanum of the citizens. All these forums were monuments to their Imperial founders and ornaments to the city.

ROYAL TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMEN'S SOCIETY, GLASGOW.—At a meeting on Friday, the 15th inst., Mr. P. Macgregor Chalmers gave a paper on Iona Cathedral. The history of the church was traced from the time of its erection in the Early Christian era, and the story was told of its partial destruction and restoration by the monks. The lecturer stated his grounds for believing the site to be that of St. Columba's original church, in contradistinction to the views of Skene, the Scots historian. The object of the present restoration, which has been carried out to Mr. Chalmers's directions, was explained, and many pictures of the building were thrown on the screen.

SHEFFIELD.—Last week, at the Sheffield University, Mr. A. B. Burleigh, of York, delivered a lecture to members of the Sheffield Society of Architects and Surveyors on "Castle Howard: its History and Architectural Features and its Artistic Treasures." The lecturer opened with interesting theories as to the proper lighting of picture galleries, especially roof lighting, and spoke very highly of the arrangements in the galleries of Castle Howard. He dealt at length with the history of the family, and with the variety of Vanbrugh's genius, Vanbrugh being the designer alike of Castle Howard and Blenheim. He went into considerable detail respecting the plans of the famous Yorkshire mansion, and its mausoleum, whose sheer magnificence made Horace Walpole declare that "it almost tempted him to be buried alive!" The paintings and other treasures were described, the whole lecture being illustrated by limelight views taken from photographs secured by the lecturer, to whom a hearty vote of thanks was accorded at the close.

An almshouse is about to be built at Lake View, Bridgeport, Connecticut, from plans by Messrs. Skinner and Walker of 1188, Main-street, Bridgeport. The estimated cost is 150,000dol.

Messrs. H. A. Hosking, surveyor to the St. Germans Rural District Council, and W. Oliver, surveyor to the Newton Abbot Urban District Council, have been appointed assistant county surveyors to the Cornwall County Council.

The Bishop of Truro has dedicated the north-west wing which has been added to the Home of the Community of the Epiphany at Alverton from the designs of Mr. F. L. Pearson, and under the supervision of Mr. E. T. Price. Messrs. Luscombe and Sons, Exeter, were the contractors, and Mr. Phillips acted as general foreman.

After an absence from the Bench of six weeks, owing to a sharp attack of illness, Sir James Lemon, F.R.I.B.A., resumed his accustomed place—one he has now filled for nearly thirty years—at the Southampton Borough Police-court on Friday morning. Mr. G. Dornay, who presided, on behalf of his brother justices welcomed Sir James, a welcome which was endorsed by the chief constable.

A Local Government Board inquiry was held at the Ritchie Memorial Hall, Hursley, on Wednesday week, by Mr. F. O. Stanford, A.M.I.C.E., into the proposal of the Hursley Rural District Council to put into force the Land Clauses Act in regard to the purchase of land needed as an outfall site for the drainage at Chandler's Ford. Mr. H. J. Weston, the engineer for the scheme, explained that the land in question is situate not far from the isolation hospital.

Engineering Notes.

THREE PIER.—The new pier at Gott Bay, at the south end of Tiree, has been finished, and the structure will be opened for public traffic as soon as the certificate is obtained from the Board of Trade. The erection consists mainly of three piers—a block of solid work, forming the entrance, and two other piers firmly connected by steel girders. The distance between the solid part and the nearest pier is 80ft., and the same distance intervenes between the first and second piers. This second, or outer, pier is hexagonal in form. The piles throughout were constructed of ferro-concrete. The engineer of the works was Mr. G. Woulfe Brennan, C.E., and the resident engineer, Mr. H. Thompson, C.E.

Building Intelligence.

COVENTRY.—A meeting of the vestry of Holy Trinity, Coventry, was held on Thursday in last week to receive a report from Sir Thomas G. Jackson, R.A., who, a few weeks ago, made an examination of the tower of the church. Large pieces of masonry fell from the tower last August. The whole of the tower below the parapet is in a terrible state of decay, though the refacing is not a century old. Many of the features of the design are nearly obliterated. The whole surface, though comparatively modern, is in a state of absolute ruin. Mr. Chataway (the local architect) has already had to remove six tons weight of loose surface to prevent it falling on to the roofs. The masonry is far past remedy by injecting any preservative solution. There is, Sir Thomas fears, no alternative but refacing the whole tower again, as it was done before, but doing it in a better manner and in a better material. Sir Thomas thinks the operation should not be deferred, and mentions £6,000 as the probable cost. A committee of the church estate was instructed to report upon the question of providing funds to meet the cost of the restoration.

Mr Wm. Frank Gardner, now assistant surveyor to the Earby Urban District Council, has been appointed assistant surveyor under the Derby Corporation.

Additions two stories in height are about to be made at the rear of the Orthopaedic Hospital, Upper Merion-street, Dublin, from plans by Messrs. O'Callaghan and Webb, of South Frederick-street, Dublin.

The town-planning committee of Edinburgh Town Council have received a letter from the Local Government Board, giving sanction to proceed with a town-planning scheme for Murrayfield, Ravelston, Craigleith, Comely Bank, and adjoining areas.

A temporary building in the grounds of the Norfolk and Norwich Hospital is being provided for the accommodation of the sick and wounded soldiers, and will be opened on February 15. Messrs. E. Boardman and Son, of Norwich, are the architects, and Messrs. J. Youngs and Son, of the same city, the builders.

Sanction has been received by the Rochdale Town Council from the Local Government Board for the borrowing of £540 and £1,116 for the purchase, fencing, laying-out of Spotland recreation-ground, and the sum of £2,194 for the provision of bowling-greens at Falinge Park and Buersil, and for levelling Cronkeyshaw Common.

A new school in Edinburgh-street, Belfast, has been opened by Sir Edward and Lady Carson. It consists of nine classrooms, divided by folding partitions, and capable of being transformed into a large assembly hall. Mr. Thomas Houston, of Belfast, was the architect, and Messrs. Thornbury Brothers, Ltd., were the builders.

Whithorn Parish Church, N.B., was reopened, after extensive renovations, on Wednesday week. The church has been entirely renewed internally, and a new porch added. The windows have been renewed, the two end windows filled with stained glass, and a pulpit and Communion-table added to the fittings. The architect is Mr. P. McGregor Chalmers, Glasgow.

Correspondence.

THE ARCHITECTS' VOLUNTEER TRAINING CORPS AND WAR SERVICE BUREAU.

To the Editor of the BUILDING NEWS.

SIR,—I should be glad if you would again grant me space in your journal to discuss recruiting for the Army. The Architects' War Service Bureau is in a position to advise professional and business men and men of skilled trades as to the branch of the Forces in which they can best serve the Government, and for which they are personally most suited.

More particularly we are recruiting for the Royal Engineers and sanitary companies. But we are also at present making a special effort to recruit a gun section for the R.F.A. Howitzer Reserve, to be composed of professional and business men, who will serve together.

Lastly, since the War Office have officially recognised the Volunteer Training Corps now existing in London, no man, whatever his age or circumstances, has any excuse for not being a member of a military organisation. Those who can join the Regular Forces should do so at once, those who cannot should join the Architects' Volunteer Training Corps, which is recognised by the Architects' War Committee, the Surveyors' Institution, the Auctioneers' and Estate Agents' Institution, the Junior Art Workers' Guild, and the London Master Builders' Association. By doing so they can materially help the recruiting authorities to distinguish between the "willing" and "unwilling" members of the community. All recruits should apply direct to 18, Tufton-street, Westminster, S.W.—I am, etc.,

ALAN POTTER,
Hon. Recruiter A.V.T.C.

18, Tufton-street, Westminster, S.W.

"UNHEALTHY SCHOOLS."

SIR,—“Anti-Draught” has wandered from the point altogether. I have not disputed the fact of down-draught being a “crying evil.” In my previous letter I stated that there are cross-ventilated schools in this country designed to prevent down-draught, and that experiments had proved this. The arguments put forward in favour of through ventilation are not based on suppositions, but on facts, and “Anti-Draught” will have considerable difficulty in proving otherwise.

Architects, members of the medical profession, and teachers have spoken with enthusiasm regarding the ventilation of these schools. That is one of the reasons why I understood that “fresh-air-at-any-price fanatics” referred to architects. However, as “Anti-Draught” refutes my statement, perhaps he will classify the persons to whom he referred.

Is he aware that the Board of Education has given the matter a great deal of attention, with the result that new regulations have been issued, which are the outcome of discussions which have taken place during the last six years between the Board's officers, architects, and education authorities? And is he conversant with the rules on ventilation and heating? One of the clauses states: “Combined systems of heating and ventilation, in which air raised to a sufficient degree to warm the rooms is used for ventilation, are not generally desirable in a school. The stimulating and invigorating effects of fresh cool air are lost, and the children become accustomed to sit with closed windows. Generally the best result will be obtained by providing ample heating power and making full use of well-arranged windows to secure cross-ventilation.” The ventilation of theatres and other such buildings is not under discussion, although there are many notorious examples in London and elsewhere of ventilation schemes that are terrible failures. Even the ventilating engineers find it difficult to explain exactly why these buildings do fail. If “Anti-Draught” and other correspondents consider that cross-ventilation is a curse and

a failure, what form of ventilation do they recommend that is not a curse, and which is always reliable under all circumstances?

Mechanical ventilation is only based on theories, and it is exceedingly difficult for anyone to bring any of these theories to a crucial test. Heating and ventilating engineers even disagree on these points. What are the actual facts? They put into a building radiators to raise the temperature of the air, and, what is worse, they make the air in the upper part of the room warmer than the lower. The result is we have what is known as a cold in the head, and such-like. It is contrary to the laws of Nature and very undesirable that the temperature at head-level should be higher than at foot-level. In fact, within limits, the cooler the air we breathe the better it is.

This, again, points to the necessity of having in a classroom a certain amount of cold air, which, at the same time, does not constitute a down-draught. With a good system of cross-ventilation it is obtained, and I think this is the general consensus of opinion among architects and physiologists.—I am, etc.,

D. WYNNE-THOMAS.

“Glenthorne,” Nunthorpe, S.O.

WATER SUPPLY AND SANITARY MATTERS.

HOUSING CONDITIONS IN A DURHAM VILLAGE.—A report on housing conditions at Seghill was submitted to the urban district council at their last meeting by Dr. Hembrough, the Medical Officer of Health for County Durham. Dr. Hembrough wrote: “When consideration is given to the fact that nearly half the population residing in the district live in houses where the proportion of occupants to rooms is more than two to one, and that in no other district in England or Wales, according to the last census return, was the general housing accommodation so limited, it is evident that drastic measures under the Housing Acts are needed. The improvements carried out are infinitesimal compared with the needs of the district, and the provisions of Sections 15 to 18 of the 1909 Act should be much more vigorously enforced. The only bedroom accommodation in a considerable proportion of the houses is a small low attic, many of which have been divided into two, in order to provide sleeping accommodation for different sexes. Before these attic rooms can be considered as being reasonably fit for habitation, the lighting and ventilation requires very considerable improvement, the partitions should be removed, and proper staircases should be provided in place of the ladders which still exist, and a fireplace should be provided in each room. Further, the supply of houses of three and four rooms for the larger families is much below the demand, and until this deficiency is met, the unenviable notoriety of this district as regards its housing accommodation is not likely to be lost.”

SOUTHAMPTON.—The town council of Southampton, at their last meeting, discussed at some length a recommendation by the water-works engineer, Mr. E. C. Rodda, that for the better supply of the Highfield district, a water-tower be erected in reinforced concrete, at an estimated cost of from £11,000 to £12,000. Alternative sites for the tower were advocated at the meeting, the one on the northern boundary of Southampton Common, the other near the new reservoir at Bassett, beyond the borough limits. By 28 votes to 14 it was decided to erect the tower on the Common site. The Water Supply Committee congratulated the council on the fact that the water engineer has discovered an abundant additional source of supply for the borough from a new shaft only 45ft. in depth, sunk at Otterbourne. The water has been analysed and favourably reported upon by Dr. A. C. Houston, Director of the Examination Department of the Metropolitan Water Board.

Mr. William Platts, of Wentworth street, Huddersfield, retired builder, died on Saturday, aged ninety years.

A Local Government Board inquiry has been held at Margate to consider the application of the town council for sanction to borrow £9,470 for the building of workmen's dwellings.

The housing committee of the Southampton Corporation recommend in connection with the development of the Hampton Park site (acquired by the corporation for housing purposes) that alternative tenders for the erection of either 24 or 50 houses at a rental not exceeding 7s. 3d. a week inclusive be invited.

Our Office Table.

A fourth memorandum on the operation of the Housing, Town Planning Act of 1909, issued on Monday night, states that the activity on the part of local authorities in regard to various phases of the housing question, as well as in regard to town planning, increased materially during the year 1914. At the cost of landlords or owners 64,332 houses were made fit for habitation in the past year, the total for the four years being 194,668. Loans to the amount of £1,074,521 were sanctioned for the purchase of land and erection of houses for the working classes, the number of houses to be erected being 4,223.

An inquiry has been held by the Local Government Board into an application by the corporation of York to borrow £6,214 for the purchase of 48½ acres of land near the centre of the city as a site for the erection of working-class dwellings under Part 3 of the 1890 Act. It was mentioned by the medical officer of health that nine out of ten house agents had no houses to let on their books, but all had from 50 to 100 applications. A number of young couples were unable to get married because they could not get houses. The population of the city was increasing at the rate of 500 per annum, and nearly 100 new houses were required every year to keep pace with the normal growth. Private enterprise had apparently come to an end, and since March only thirteen houses to be rented at £15 per annum had been erected. At the present time unemployment in the building trade is normal; but local architects had little in hand, indicating that there would be a lack of employment in the near future.

As a result of a conference on Friday between the Earl of Elgin and representatives of the town-planning committee of Dunfermline Town Council, the draft agreement between the parties in regard to the town-planning scheme for Rosyth was finally adjusted. The Earl of Elgin is the largest landowner interested in the scheme. The draft agreement between the committee and the proprietors of Pitreavie estate, a large tract of which will be incorporated in the scheme, has also been practically adjusted. There yet remains to be finally adjusted the draft agreement with the Admiralty, who are also large landowners interested.

The town council of Edinburgh discussed at a special meeting, and finally approved, with verbal alterations, the draft of the Edinburgh Corporation Provisional Order, 1915. The draft Order seeks authority to construct new tramways in Colinton parish and in Corstorphine parish, and to carry out street-widenings which have been adjusted by the tramway committee; to carry out certain improvements at Gibb's Entry and in the Cowgate; to carry out works for the protection of the foreshore at Joppa; to shut up or close a street which, through change of circumstances, is no longer required for street purposes; to order demolition of uninhabitable property ordered to be closed up by the public health committee where the owners have taken no steps to make the property habitable; to control conversion of buildings formerly used as dwelling-houses into factories or for business purposes; a provision as to the ejection of steam or waste gas arising or produced in any trade, business, or manufacture, and to provide penalties where such steam or waste gas is discharged in such a way as to be an annoyance to the public; power to cut and lop trees overhanging streets; to authorise and empower the corporation to provide and hire out electric motors and other apparatus and fittings, and to provide showrooms; and to enlarge and extend the powers of the corporation with respect to the building-lines of any street or court. During the discussion the clause providing for the equalisation of rates was deleted from the draft.

Mr. Ainsworth Mitchell describes, in "Knowledge," the interesting results obtained by the Government chemist by

making analyses of old wax impressions on documents in the Public Record Office. The seals examined dated from the 13th to the 18th century, and differed but little from modern sealing-wax. Most of them consisted of a mixture of beeswax and resin, others of pure beeswax. Two seals, of the dates 1399 and 1423 respectively, were composed of wax, the characteristics of which agreed more nearly with those of East Indian than of European beeswax. The wax composing an impression from the Great Seal of 1350 agreed, in chemical and physical characters, with pure beeswax of to-day. The pigment in the red seals was vermillion, while the green seals contained verdigris.

The death has occurred of Mr. J. Wolstenholme, formerly borough surveyor of Blackpool.

The town council of Waterford have received the sanction of the Local Government Board to a loan of £23,138 for a housing scheme.

The corporation of Cardiff have resolved to carry out the improvement of the tramway along City-road to Milton-street by doubling the tramway-line, at an estimated cost of £7,000.

The corporation of Louth have instructed Mr. Latham, C.E., to prepare plans for additional works required to be carried out for isolating all the sewage from the River Lud.

The urban district council of Romford have received the sanction of the Local Government Board to loans of £11,288 for woodpaving, £9,616 for foundations, setts, and kerbing, and £4,184 for works of sewerage.

A pinnaced tower has just been added to the Roman Catholic church at Donnybrook, near Dublin. Messrs. W. H. Byrne and Son, of Suffolk-street, Dublin, were the architects, and Mr. M. J. Green, of Donnybrook, was the builder.

The Newton Heath Junior Day Technical School was opened on Monday at the Newton Heath Town Hall. It is for boys between 13 and 16 years of age who desire to enter the engineering, building, and allied trades, and is the first of its kind in Manchester.

The Cheshire Education Committee have adopted plans by the county architect for a new dairy institute at Henhull Hall, Nantwich. The buildings will include a dairy block, education block, an hostel and other equipment, and the approximate cost is £25,668.

The death is announced of Mr. John Topping, master plumber, of Towngate, Marsden, Colne Valley, at the age of fifty-seven years. Mr. Topping was secretary and a trustee of the Marsden Mechanics' Institute, and held other public appointments. He leaves a widow and eight children.

On Friday, February 12, two Royal Academicians will be elected in place of the late Mr. W. H. B. Davis and of Mr. Lionel P. Smythe, who has retired. Mr. Smythe was born in 1840, elected an Associate in 1898, and made a full member as recently as 1911. He is a member of the Royal Society of Painters in Water-Colours.

Colonel Godlieb James van Someren, whose death occurred after an operation at Cathcart-road, South Kensington, on the 13th inst., aged seventy-two, was formerly Conservator of Forests to the Government of India. He entered the Madras Infantry in 1859, and was appointed to the Forest Department in 1864. He was Director of the Forest School from 1889. He retired in 1892.

At the meeting of the Bristol Dock Commissioners, on Monday, the death of Mr. W. W. Squire, for many years engineer to the commissioners, was reported, and it was decided: "That in consideration of the amount of extra work and responsibility undertaken by the engineer in connection with the construction of the Royal Edward Dock, a sum of £1,500 be paid to his widow."

At the adjourned meeting of the Bath City Council, held at the Guildhall on Tuesday, the debate was resumed on the report of the baths committee, recommending the adoption of a scheme for a rearrangement, renovation, and building in a westerly direction of the bathing establishment, at an estimated expenditure of about £20,000. There was great divergence of opinion in the council as to the wisdom of the present proposal, and Alderman Silcock made the suggestion that the committee should consider the question of developing east of the pump-room, but not necessarily upon the site proposed in scheme No. 1, which was before the council some months ago. Further consideration of the matter was adjourned for another week.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Victoria and Albert Museum. "English Gothic Windows," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.
Royal Society of Arts. "Oils: their Production and Manufacture," Cantor Lecture No. 2, by Dr. F. Mollwo Perkins. 8 p.m.

Surveyors' Institution. "The Report of the Land Enquiry Committee on Urban Land Tenure," by J. G. Head and Joshua Bury. 8 p.m.

Architectural Association. "What Architects may Learn from the Enemy," by Professor W. R. Lethaby, F.R.I.B.A. 8 p.m.

TUESDAY.—Royal Society of Arts. "Economic Development of British East Africa and Uganda," by Major E. H. M. Leggett, D.S.O. 4.30 p.m.

Institution of Civil Engineers. Discussion on "The Lateral Pressure and Resistance of Clay, and the Supporting Power of Clay Foundations." Paper on "Engineering Operations for the Prevention of Malaria," by Frank Dudley Evans, Assoc. M.Inst.C.E. 8 p.m.

WEDNESDAY.—Federation of Building Trade Employers. Annual Meeting. Throne Room, Holborn Restaurant. 10.30 a.m.

St. Paul's Ecclesiological Society. Exhibition of Objects of Ecclesiological Interest. 8 p.m.

Royal Society of Arts. "Portrait Painting," by the Hon. John Collier, R.O.I. 8 p.m.

THURSDAY.—British Museum. "The Great Baths of Rome," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.

FRIDAY (JAN. 29).—Town Planning Institute. "The Urban Land Problem," by Prof. S. D. Adshead. 8 p.m.

Glasgow Architectural Craftsmen's Society. "Lighting," by James Telfer. 8 p.m.

SATURDAY (JAN. 30).—Association of Engineers-in-Charge. Discussion on "English v. German Superiority of Business Methods." St. Bride's Institute, Bride-lane, E.C. 7.30 p.m.

New council schools, built in Castle Dyke, Barton-on-Humber, at a cost of £11,425, have been formally opened.

Sir Robert Lorimer, F.R.I.B.A., of Edinburgh, has been elected a Fellow of the Society of Antiquaries of London.

Mr. B. C. Roberts, assistant surveyor, Langport, has been appointed surveyor to the Pontypool Rural District Council.

The River Tyne Improvement Commissioners have appointed Mr. Ralph F. Hindmarsh, M.I.C.E., to be chief engineer to the commission, in succession to Mr. N. G. Gedyne, resigned.

Mr. A. G. Drury held a Local Government Board inquiry at Colwyn Bay on Tuesday into an application by the urban district council for sanction to borrow £11,000 for works of sewerage and sewage-disposal.

The Southampton Board of Guardians have adopted plans by their architect, Mr. A. F. Gutteridge, for new homes for boys and girls to be built at Hollybrook. Each block will accommodate sixty children.

The urban district council for Barnes have agreed to contribute £4,000 to the London County Council towards the cost of constructing a relief culvert at Beverley Brook, the cost of which is estimated at £8,000.

Mr. Peter Graham, R.A., has sustained a heavy bereavement in the death, at the age of twenty-one, of his youngest son, Lieutenant Richard Graham, Scottish Rifles, who was killed in action in Flanders on the 10th inst.

The death took place on Monday, at his residence, Alpine Villa, Mountjoy-road, Huddersfield, of Mr. Fred Radcliffe, formerly a member of the firm of Messrs. John Radcliffe and Sons, Ltd., contractors and builders, Huddersfield.

By the removal of houses in Old Palace-yard, as part of the widening of Abingdon-street, there has been opened out to view the three-storied tower of 14th-century date, known as the King's Jewel House. Formerly used as a depository for the royal jewels and regalia, and afterwards as a record office, it has been occupied since 1869 by the Standards Department of the Board of Trade.

Mr. A. W. Brightmore, B.Sc., M.Inst.C.E., Local Government Board Inspector, has held an inquiry in the Town Hall Buildings, North Shields, in reference to an application by the Tynemouth Corporation for sanction to borrow £11,760 for the purpose of reinstating the sea banks at Tynemouth, where the landslip occurred in January, 1913. Mr. J. F. Smillie, borough surveyor, described the scheme, which might be regarded as a complete undertaking.

IRON.

OTHER METALS.

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TILES.

OILS

GLASS (IN CRATES).

Mr. Stanley Empsall, of the urban district council offices, Bentley, Mr. Aubrey Glyn Evans, of the borough engineer's office, Neath, and Mr. Bernard Robson, A.R.I.P.A., of Hull, have been appointed town-planning assistants in the office of Mr. H. Gilbert Whyatt, M.Inst.C.E., borough engineer, Grimsby. Three town planning schemes are to be dealt with, covering an area of 13,000 acres.

TRADE NOTES.

Under the direction of Messrs. Mence and Finn, architects, 11, St. Peter's-street, St. Albans, Herts, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air pump" ventilator and air inlets, has been applied to the new boardroom, St. Albans Union Workhouse, Herts.

There is no doubt that not only the roofs of most buildings in these isles have been tested with regard to their watertightness by the recent heavy rains, but also the walls and cellars. A wall or cellar that has failed to keep a structure dry during this period can, we are assured, be made bono dry by adding the powder "Pudlo" to the cement used for concreting and rendering. The makers claim to have cured many such cases in the past. They state they will be very pleased to advise, if full particulars are sent them.

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TENDERS.

* Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ASHFORD, CO. WICKLOW.—For the erection of a new church at Ashford. Mr. P. Munden, Dublin, architect:—

Kinlen, P., Rathgar (accepted).

BALLYHAUNIS.—For building five double cottages at Ballyhaunis, for the Claremorris Rural District Council:—

McDonnell, P., Abbey-street,
Ballyhaunis (accepted) ... £1,450 0 0

BIRKENHEAD.—For making-up Milner-street, for the corporation. Mr. C. Brownridge, M.I.C.E., surveyor:—

Chadwick, W. F., Ltd., Liverpool £49 18 0
(Accepted.)

BRISTOL.—For the construction of a ferro-concrete wharf at the oil berth in the western arm of the Royal Albert Dock, for the Dock Commissioners:—

Cowlin, W., and Son, Bristol (accepted).
For traffic plant:—

Perkins, J., and Son.

EDINBURGH.—For alterations to the old Corn Exchange, Grassmarket, for the town council:—

Duncan, J., and Son, 127, Grove-street, Edinburgh (accepted) ... £1,478 0 0

FLIMWELL.—For alterations and additions at the workhouse, Flimwell, near Ticehurst, for the guardians. Mr. H. M. Caley, 29, Mount Pleasant, Tunbridge Wells, architect:—

Edwards, L., Hawkhurst ... £460 0 0
Wallis, H. G., Lamberhurst ... 121 0 0
Cheesman, A. F., Tunbridge Wells ... 407 19 0
Baldock, J. F., Wadhurst ... 395 0 0
Baldock, H., Wadhurst ... 365 0 0
* Accepted.

GLASGOW.—For the extension of the switchboard panels in the electric sub-station at Yorkhill, for the corporation:—

Lackie (accepted) ... £105 0 0

GLASGOW.—For the electrical installation at the new hospital at Robroyat, for the corporation:—

Johnston, Park and Co., Glasgow £3,776 0 0
(Recommended for acceptance.)

GOSPORT.—For the extension of Grove-road school, for the education committee:—

Spalding and Long, Norwich ... £3,910 0 0
Evans, W. W., Portsmouth ... 3,345 0 0
Hunt, J. ... 3,333 0 0
Dashi, C. W., Ltd. ... 3,312 0 0
Croad, J. ... 3,281 0 0
Lear, C. J., and Son (accepted) ... 2,769 0 0
(Rest of Gosport)

GRIMSBY.—For extensions and additions to the workhouse and infirmary buildings, Scartho road, Grimsby, for the guardians. Mr. H. C. Scapling, Court Chambers, Grimsby, architect. Quantities by Mr. J. Watson, F.S.I., Bowalley-lane, Hull:—

Jarvis, J., London ... £24,720 0 0
Pinfrey, B., Guisborough ... 23,949 0 0
Jon, W. ... 23,927 0 0
Sawby and Walsham ... 23,850 0 0
Wilkinson and Houghton ... 23,684 0 0
Gilbert and Hall, Nottingham ... 23,141 0 0
Thompson, J. H., and Sons, Ltd. ... 22,994 0 0
Hewins & Goodland (accepted) ... 22,915 6 8
(Rest of Grimsby.)

HARTLEY WINTNEY.—For hot-water work at the workhouse, for the guardians:—

Cannon and Sons (accepted) ... £151 15 0

HINCKLEY.—For the erection of new offices and additions to Sketchley Dye Works. Mr. W. T. Greewood, A.R.I.B.A., Leicester, architect:—

Herbert, H., and Sons, Ltd. ... £4,039 0 0
Jeffcote, A. ... 4,028 0 0
Greaves, G. ... 4,018 0 0
Chapman, J., and Sons, Ltd. ... 4,005 0 0
Moss, W., and Son ... 3,995 0 0
Hutchinson, J., and Son ... 3,990 0 0
Bowles and Son ... 3,942 0 0
Sharpe, W., and Son, Ltd. ... 3,940 0 0
Flavell, W. K. ... 3,871 0 0
Clarke and Garret ... 3,840 0 0
Bentley, J., and Co., Leicester ... 3,789 0 0
* Accepted.

HOLBOROUGH.—For the construction of the Holborough sewer, for the Malling Rural District Council:—

Pearce and Son ... £90 10 0
Langridge R. ... 60 0 0
Davidson ... 58 0 0
Wilford and Son ... 54 10 0
Ballard (accepted) ... 41 0 0

IPSWICH.—For the conversion of the ground floor of the cookery centre in Tower Ramparts, Ipswich, into two mechanical laboratories, for the education committee. Mr. E. T. Johns, S. Lower Brook-street, Ipswich, architect:—

Marriott, V. A. ... £337 0 0
Jepson, J. ... 335 0 0
Seaman, R. C. ... 333 10 6
Bennett, R., and Snares ... 330 0 0
Catchpole, E., and Sons, Ltd. ... 325 0 0
Sadler, A., and Sons (accepted) ... 320 0 0
(All of Ipswich)

KEIGHLEY.—For the construction of a sewer from Hard Ings Lane to the Beechcliffe sewer, for the corporation:—

Morley, W., and Sons (accepted) £515 13 2

LONDON, S.W.—For the provision of a reinforced concrete coal-bunker, for the Battersea Borough Council:—

Empire Stone Co. (accepted) ... £345 0 0

LONDON, E.—For the erection of a disinfecting building at North Wharf, Blackwall, E., for the Metropolitan Asylums Board:—

Gardner and Hazell, Islington ... £560 0 0
Hussey, W., Albert Hall Mansions, S.W. ... 467 0 0
Kazak, L., Belvedere ... 430 0 0
Truscott, R. J., Forest Gate* ... 357 0 0
(Engineer-in-chief's estimate, £420.)
* Recommended for acceptance.

OLD KILLINGBECK.—For the erection of admin. block at smallpox hospital, for the Leeds Sanitary Committee. Mr. W. T. Lancashire, Municipal Buildings, Leeds, city engineer:—

Rodgers, W., and Co., Leeds ... £1,038 0 0

SALLYNOGGIN.—For the erection of 36 artisans' dwellings, for the Kingsdown Urban District Council:—

Bowers, G., Ballybrack ... £7,487 19 4
Fraser, A., Dublin ... 7,450 0 0
Duncan, H., and Son, Dublin ... 7,200 0 0
O'Brien, M. J., Glashule ... 7,185 0 0
Weaver, F., Glashule ... 7,140 0 0
Plunkett, J., Ballybrack ... 6,994 9 0
Jennings, W. (accepted) ... 6,850 0 0

SOUTHAMPTON.—For the erection of a school, for the corporation. The Clerk, Education Office, St. Mary's-road, Southampton:—

Jenkins and Sons ... £17,468 0 0
Stevens and Co. (accepted) ... 17,320 0 0
(Both of Southampton.)

SOUTHWARK, S.E.—For erection of a new school for physically defective children in Webber-street, Southwark, for the London County Council:—

Thorne, F. and T., Isle of Dogs ... £7,967 0 0
Parker, G. and Sons, Peckham ... 7,855 0 0
Appleby, J., and Sons, Ltd., Southwark Park ... 7,382 0 0
Downs, W. Ltd., Walworth ... 7,375 0 0
Thomas and Edge, Woolwich ... 7,338 0 0
Garrett, J., and Son, Balham Hill ... 7,324 0 0
Akers, W. and Co., Ltd., South Norwood ... 7,294 0 0
King, W., and Son, Vauxhall Bridge-road ... 7,217 0 0
Smith, W., and Son, Harleyford-road ... 7,200 0 0
Blay, W. F., Ltd., Dowgate Hill, E.C. ... 7,177 0 0
Bowler, J. and C., Ltd., Upper Norwood ... 7,123 0 0
Holloway, H. L., Deptford ... 7,093 0 0
Smith, J., and Sons, South Norwood ... 7,050 0 0
Rice and Sons, Stockwell-road ... 7,039 0 0
Longley, J., and Co., Crawley ... 6,983 0 0
Ashby and Horner, Ltd., Aldgate Soole, S. N., and Son, Richmond* ... 6,672 10 7
* Provisionally accepted.

STEPNEY, E.—For enlarging the Redmans-road school, Stepney, for the London County Council:—

Markham & Markham, Victoria-street ... £5,483 0 0
Cheesum, J., and Sons, South-place ... 5,260 0 0
Wallis, G. E., and Sons, Ltd., Pantons-street, W. ... 5,140 0 0
Ashby and Horner, Ltd., Aldgate Holloway, H. L., Deptford ... 5,091 0 0
Blake, W. E., Ltd., Fulham ... 5,040 0 0
Appleby, J., and Sons, Ltd., Southwark Park ... 4,997 0 0
Bowler, J. and C., Ltd., Upper Norwood ... 4,996 0 0
Patman & Fotheringham, Ltd., Islington ... 4,971 0 0
Monk, A., Lower Edmonton ... 4,920 0 0
Leng, T. D., Deptford ... 4,872 0 0
Maddison, W. J., Canning Town Fairhead, A., and Son, Enfield* ... 4,865 0 0
* Provisionally accepted.

ST. PANCRAS, N.W.—For erecting an emergency staircase at the Camden-street school, St. Pancras, for the London County Council:—

Davis, H. C., and Co., Ltd., Clapham ... £190 0 0
Carron Co., Upper Thames-street Hayward Bros. and Eckstein, Borough ... 186 17 6
Cadogan Ironworks, Chelsea ... 186 0 0
Mills, G., and Co., Radcliffe ... 177 0 0
Wilmer and Sons, St. Mary Axe ... 167 0 0
Hawkins and Baxter, Upper Thames-street ... 159 0 0
Norris, F. W., and Co., St. Andrew's Hill (accepted) ... 156 0 0

STRACHUR.—For alterations of property at Old Inn, Strachur, for the Cowal District Committee:—

Ferguson, A., Strachur (accepted) £150 0 0

THINGWALL.—For the erection of the sanatorium, for the Birkenhead Corporation:—

Fleming, A., Neston (accepted) ... £7,993 0 0

WARGRAVE.—For rebuilding St. Mary's Church, Wargrave, Berks. Mr. G. H. Fellowes Prync, F.R.I.B.A., 6, Queen Anne's Gate, S.W., architect. Quantities by R. Henry Hale, F.S.I., 6, Queen Anne's Gate, Westminster, S.W.:—

Trollope and Sons, Pimlico ... £10,829 0 0
Easterling, W. H., Wargrave ... 10,556 0 0
Cox, C., and Sons, Maidenhead ... 10,390 0 0
Benfield and Loxley, Oxford ... 10,177 6 2
Webster and Cannon, Aylesbury ... 10,049 0 0
Longley, J., and Co., Crawley ... 9,887 0 0
Goddard and Sons, Dorking ... 9,147 0 0
Franklin, Ltd., Deddington ... 9,070 0 0
Bowman, A. W., Bournemouth ... 9,043 0 0
Cooper, J. K., and Co., Maidenhead ... 8,997 0 0
Miskin, C., and Sons, St. Albans ... 8,316 0 0
Walden and Cox, Henley-on-Thames (accepted) ... 8,177 8 1

WILLASTON.—For new elementary school at Willaston, accommodating 200, for the Administrative Sub-committee for Education for Bebington and Neston area. Messrs. E. Kirby and Sons, 5, Cook-street, Liverpool, architects:—

Bullen Bros. and Sons, Ltd., Liverpool ... £4,130 0 0
Jones and Sons, Liverpool ... 4,074 0 0
Cook, J., Stoke-on-Trent ... 3,954 0 0
Rimmer Bros., Liverpool ... 3,948 0 0
Rothwell, P., Birkenhead ... 3,775 0 0
Lee, J., and Son, Bebington ... 3,750 0 0
Haugh and Pilling, Liverpool ... 3,749 0 0
Merritt, J., Birkenhead ... 3,738 0 0
Davis and Gaskell, Birkenhead ... 3,700 0 0
Fleming, A., Neston ... 3,655 0 0
Fleming, W., and Co., Neston ... 3,649 0 0
Milestone, J. A., Wallasey ... 3,590 0 0
Duthie, J., and Son, Liverpool ... 3,550 0 0
Huxley, J., Malpas (accepted) ... 3,520 0 0
(Architect's estimate, £3,700.)

YEADING.—For works at the hospital, for the Uxbridge Joint Hospital Board:—

Spalding, C., Hayes (accepted) ... £222 0 0

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the Editor of the BUILDING NEWS, Edlingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

RECEIVED.—B. A. A.—J. J.—P. and Co.—F. F. Co.—I. C. S.—J. K. and Son.—W. H. S. and Son.—H. C. C.—F. and Co.—J. H. P.—M. and Co.—K. C. C.—Sir W. H. B. and Co., Ltd.—H. M.—P. B. and B.—P. yr O. Q. Co., Ltd.—H. J. S.

NESCUS.—Yes.

T. H. P.—It seems a fair extra.

E. R. R.—We think not; but, of course, present circumstances are exceptional, and, in the event of your death, what you suggest might be tested.

SURVEYOR.—If you will briefly state the points we will spare half a column; but certainly cannot half-fill an issue with your many extracts. 2. Yes.

PERPLENED.—If the bricks are properly weather-tiled, and the mortar joints good and sound, the following, known as "Sylvester's Process," is as good as anything we know. If not it may fail. The process consists in using two washes or solutions for covering the surface of brick walls, such as yours, one compound of Castile soap-and-water, in the proportion of 1 lb. of soap to one gallon of water; and one of alum and water, in the proportion of 1 lb. of alum to four gallons of water; both substances to be perfectly dissolved in the water before being used. The walls must be perfectly clean and dry, and the temperature of the air should not be below 50° Fahr. when the compositions are applied. The first, or soap-wash, should be laid on when at boiling heat, with a flat brush, taking care not to form a froth on the brickwork. This wash should remain 24 hours, so as to become dry and hard before the second, or alum wash, is applied, which should be done in the same manner as the first. The temperature of this wash when applied may be from 60° to 70°, and it should remain also 24 hours before a second coat of the soap-wash is put on; and these coats are to be repeated alternately until the walls are made impervious to rain. The alum and soap thus combined form an insoluble compound, filling the pores of the bricks, and entirely preventing the rain-water from penetrating the walls.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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OUR ILLUSTRATIONS.

New Coal Exchange, Swansea. View, plans, and section. Mr. Charles T. Ruthen, Licentiate R.I.B.A., Architect.
--

H.M. Office of Works Offices, New Bridge-street House, Blackfriars, E.C. Mr. Robert Angell, Licentiate R.I.B.A., Architect.
Cunard Building, Liverpool. Plan of Ground Floor and Longitudinal Section. Messrs. Willink and Thicknesse, F.F.R.I.B.A., Architects. Messrs. Mewes and Davis, Consulting Architects.
New Post Office, Northampton. View and plan. Mr. A. R. Myers, A.R.I.B.A., Architect, H.M. Office of Works.
Nos. 14 and 16, Great Portland-street, W. Mr. Ernest Flint, F.R.I.B.A., Architect.

THE SUPERVISION OF WORKS. FINISHINGS.

Detail drawings of construction greatly facilitate the work of the supervising architect. Such drawings must be complete and fully dimensioned. The foreman who regularly receives, from the architect, good constructional details covering all trades is warned in an inobtrusive but quite definite manner that good, accurate workmanship is expected. The young, and the inexperienced, will do well to note this. It is too common a practice to detail architectural features, and to leave construction as such to be expounded by $\frac{1}{2}$ in. scale drawings, in forgetfulness of the fact that elaborate ornamentation, destined originally to please, will rather become an offence in the eyes of a client who is dissatisfied by reason of practical deficiencies. If, therefore, we desire to minimise the difficulties obviously inherent where there is no representative of the architect permanently on the works, we shall do well to give full and liberal constructional details. Let the young architect draw to at least $\frac{1}{2}$ in. scale, every brick, stone, and timber in his building. He had a thousand times better expend his time in this way than neglect actual work in pursuit of new business. Thus, in the finishing of roofs, which we have, in our last article, imagined in outline framing, let every batten and slate course be drawn, with absolutely complete and accurate details of plumbing, including gutters and flashings and the like. The main elements of a good building are (1) enduring foundation, (2) strong walls, and (3) a stout roof. We have taken depth of concrete as a safeguard usually against the practically irremediable disaster of foundation failure; for a satisfactory superstructure we have set down solid flushed brickwork of the best as the prime essential; while for a good roof we have stipulated for sound timbers, correctly framed and strongly secured, everywhere coinciding accurately with a geometrical prototype, the upper surfaces of rafters inscribing a true plane, presenting thus an accurate base for finishing work—battening, slating, etc. To assist satisfactory workmanship in this matter of roof-finishing, on a satisfactory piece of carpentry, we suggest very complete and full drawings giving every detail of construction in the several trades, showing battening, boarding, slating or tiling, and plumbing, not forgetting the benefits attendant upon the careful detail drawing of flues and chimney-stacks, to avoid down-draught and smoke troubles.

The honest builder and the practical foreman will not only be insensibly induced to better workmanship, but will be

truly obliged for full constructional detail drawings. If the man who designed the building does not know how to prepare these, he can scarcely complain of inferior work; in fact, he will not be competent to detect it; and, as an architect, is in a false position to make good, which practice on the lines we have suggested will be found the best and surest remedy. In the light of known facts, or beliefs, as to what constitutes architecture, it is difficult to conceive of an architect who has not an absorbing taste for construction. It was a born architect who long since remarked to us:—"I like to see things grow." Therefore, to the inexperienced, we recommend minute delineation of construction. Dimensioning should be complete. Too often the foreman has to figure out for himself. This is not as it should be, and a careless, badly-drawn set of working drawings, if it does nothing directly to induce bad, certainly does not help to produce good, workmanship.

If we have examined, and, in doubt, tested, material, such as cement, we have satisfied one, and are left with the other essentials of construction—adhesion or the joining of part to part, and correct placing in situ. Of these, ideal working drawings go far to secure the last desideratum, and render the need for constant supervision less urgent, so that we are left finally with adhesion—mortar-joints, cementing, spiking, bolting, and the like, which most need overseeing in building works. We can clamp and ring our bricks in the brickyard or builder's store, and then no one but a thief can prevent their due appearance in the wall; but to get good mortar-jointing one must almost stand over the bricklayer.

In steel construction we can readily check sizes, and, by estimation, weights, while makers' brands are practically a guarantee of quality. Given accurate cutting, that which we have to look to is therefore fastenings. This being so, our drawings for steel and iron construction should show every angle and fish-plate, every bolt-hole and bolt and nut, to the end that the engineers may erect without real need of reference, to any supervisor whatever.

Plaster and paint hide away a multitude of constructional sins; so the supervisor will have been on the alert in time. If we consistently worked in oak and teak, the duties of supervision might be lighter. Deal joinery, however, may often be conveniently inspected, before priming, in the contractor's workshops; and similarly much general wrought woodwork, affording an opportunity for seeing that the wood is sound, and that the contractor is not in-

clined to make a patriotic display in red, white, and blue. Wrought timbers, doors, windows, and joinery in general are all better inspected before delivery on the works, and it is a convenient arrangement for those inexperienced in building supervision if the builder's shops are handy to the works. In this case, the architect can, at each inspection include a visit to the workshop, securing, further, an opportunity for giving final instructions as to finishings; and it may be to receive some instructions, for a master-builder of long experience may not impossibly give a practical hint or two to a young man scarcely out of his 'teens. The youthful supervisor will gain nothing by "swank." If in doubt, if his knowledge fails him, let him seek advice. We call to mind a country builder who had an unusually complete and well - equipped power moulding machine. Our specification had included commonplace moulds for architraves and the like; but in spite of a plain hint from the contractor as to the existence of the plant, we neglected to seize the opportunity for getting some quite novel mouldings purpose-made, without extra; for the man was evidently proud of his machine, and would have been pleased to have set it to work. Although completely prepared details before commencement of work greatly conduce to harmonious progression and frees the supervisor's mind of design problems, we should now and again be prepared to modify our cut-and-dried scheme if good opportunity offers.

The actual finishing and final works in building are matters of the most immediate interest to clients. If the marble veneer, the ornamental plaster, wall-hangings and painted surfaces, ceilings, doors, windows, and overmantels could be sustained correctly in place by magic, the client might be none the less pleased than where scientific pier, truss, and framing are relied on; but the architect had better not trust to conjuring! What is good workmanship in finishing buildings but that which is true in line, "square," correct in angle and mitre, and, above all, in "stop" or end, which is, as it were, the finishing of the finish? In a flat panel, the coach-painter's ideal is a mathematical plane. We call to mind a certain array of half-brick glazed-both-sides walling. It should have been condemned. We hesitated. Our demur was in reference to the correlation of the work with the term "seconds"; but the cracks, we remembered, were passable. Looking back, we should say that the workmanship was "thirds," or worse, and on the score of workmanship alone the walling should have been condemned. As a rule, the young architect

will find that he has no great difficulty on the score of material. In the majority of cases it is in the mode or manner of putting materials together that trouble arises, and particularly when the liberal employment of the term "good" as distinct from "best" opens way for doubt and argument.

MODERN BELGIAN ART AT THE ROYAL ACADEMY.

An important addition has been made to the War Relief Exhibition at the Royal Academy of about two hundred works of Belgian sculpture, painting, and engraving. The section has been prepared by M. Paul Lambotte, Directeur des Beaux Arts, Brussels, who was invited by the committee to form a collection of modern Belgian works of art, which should be sold for the benefit of Belgian artists. The new section, in which the sculpture is a strong feature, was formally opened on Wednesday by her Royal Highness Princess Clémentine of Belgium and Prince Napoleon.

The sculpture is really a most creditable display. The figures in the Central Hall include a couple of plaster busts (971 and 996), by M. Georges Minne, and a fine plaster torso (982) by the same artist. M. Victor Rousseau sends a good bronze group "Debardeur" (974), and several other works in Galley VII. M. Egide Rombaux contributes "Les Filles de Satan" (983). The late M. Julien Dillens is well represented by "L'Art Flamande" (984), a model of his decorative statue in bronze for the Palace of Fine Arts, Brussels, a statuette of Lansquenets (985), and a bronze "Herant de Gilde Grantoise" (963). M. Pierre Braeche has a noticeable group "Femmes des Pecheurs" (989). "St. Martin et le Mendicant" (1005), by the late M. Charles van der Staffen, is another fine bronze group.

Of the paintings, we may mention "Le Hotel de Ville, Brussels" (845), and "La Grand Place" (846), by M. Henry Cassiers. Three good portraits in oil are (909), by M. Alfred Jonniaux; "Mme. la Comtesse de Lalaing" (942), by Comte Jacques de Lalaing, and "Marie Louise" (945), by M. Emile Viors. We like "Reverie" (953), by M. Andre Cluysenaar better than his nude figure "Reyret" (954). "The Might of Light Stopping the Demon of the War" (905) and "The World's Hope" (908), both by M. Jean Deloille, are both good. "La Recolt des Pommes" (913), by M. Emile Claus, and "Le Fete les Ballons" (852) are two of the most prominent exhibits. M. Alex Marcette is a prolific contributor, sending no less than eight works: his "Viex Bastion, Ypres," perhaps the best rendered.

Of the many others, the great majority well deserve the mention space forbids, and very few are commonplace. As a whole, the addition does honour to Belgium, and well warrants the hope that in happier times we may welcome another and more favourably selected exhibition of the works of her painters and sculptors, who share our sympathies and admiration in as marked a degree as the heroism of her soldiers and the self-sacrifice of her citizens.

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS OF GREAT BRITAIN AND IRELAND.

The thirty-seventh annual general meeting of this federation was held on Wednesday in the Throne Room, Holborn Restaurant, W.C. The chair was occupied by the president (now retiring from office), Mr. W. Thomas, of Cardiff, and there was a large attendance of delegates from all parts of the kingdom.

The president extended a hearty welcome to MM. Lootens and Cockerell, representa-

tives of the Belgian Federation of Building Trades and Public Works, a body affiliated to their federation, and expressed the deep sympathy of the members at the circumstances under which their guests found themselves as exiles to this country. M. Lootens replied in fluent English. A cordial welcome was also accorded to Colonel Barker and Mr. Hollowell, members of the South African branch of the Federation.

The President moved the adoption of the annual report, remarking that at the beginning of last year (1914) they were faced with very great difficulties in London. After enormous labour all these difficulties had been surmounted, and the federation stood now more firm and united than it had ever done. He trusted that all the trades concerned in the London dispute would come into the conciliation scheme. The total number of local associations affiliated was now upwards of 162, with an aggregate membership of about 6,500.

Mr. William Shepherd, of Bermondsey, seconded the adoption of the report. He mentioned that the subsidiary report of the Employers' Parliamentary Council was possessed of a conciliatory tone. It was a purely defensive organisation. They had sustained during the year two great losses by death—Earl Wemyss and Lord Merthyr. These were both present at the dinner-party at Lord Wemyss's London house in 1897 at which the council was founded. Of those then present, all had now passed away except Mr. Frederick Millar. The council (and the federation) had no objection *per se* to trade-unions, which, when established, were benefit societies pure and simple, and conferred great benefits on their members. The change in their character was manifest and very great. The aim of the council was that in Parliamentary legislation, whether public or private, the interests of the employers should be vigilantly watched and protected. He referred in detail to the judgment given by Mr. Justice Joyce in December last in the two cases of "H. R. Smith and Others v. The Amalgamated Society of Carpenters and Joiners" and "C. O. Jones and Others v. The General Union of Operative Carpenters and Joiners," saying that the judgment was a very unfortunate decision, and some thought that the case had not been properly put before the learned Judge. Both cases raised the same question, the actions being brought by members of the defendant trade-unions who had refused to obey orders to strike, and who had in consequence been expelled. Mr. Justice Joyce said if he had to decide the case on the facts, without regard to legal questions, he would have little difficulty in finding in favour of the plaintiffs. But a number of cases had been cited to him, and on them he found it impossible, acting as a court of first instance, to entertain the action with reference to the point of expulsion. He held that the decision in the Osborne case (No. 2), where it was held that the society was not an illegal one, did not affect the present action, and he decided that it must fail. He dismissed it with costs. He feared that Mr. Justice Joyce had altogether misunderstood the effect of the decision in Osborne's case, and deeply regretted that they could not see their way to raise an appeal in this case.

A long discussion ensued on the decrease of apprentices and the threatened greater scarcity of labour, in which Mr. Cooke, of Preston, Mr. W. J. Renshaw, of London, Mr. Howard, of Manchester, Mr. F. Woods, of Bolton, Mr. F. L. Dove, of London, Mr. F. Thorne, of London, and Mr. T. Easton, of Newcastle, and others took part. On the motion of Messrs. Cooke and Howard, the question of apprenticeship and the limitation of labour was referred to the administrative committee for their consideration, with power to act.

Mr. W. H. Hope, of Sunderland, expressed the thanks of the meeting to the president and Mr. Shepherd, to the administrative committee, and the conciliation board generally for their assiduous and disinterested services. This was seconded by Mr. A. J. Forsdike, of Sheffield, and agreed to.

The balance sheet and financial report

were adopted on the motion of Mr. James Storrs, of Stalybridge, seconded by Mr. H. Willcock, of Wolverhampton. The balance in hand had increased from £2,081 to £2,093.

On the motion of Mr. Storrs, seconded by Mr. George Macfarlane, of Manchester, it was agreed to admit to membership of the National Board of Conciliation the Amalgamated Society of Woodcutting Machinists.

Mr. L. Radcliffe, of Huddersfield, moved, and Mr. T. Hartley, of Blackpool, seconded, the following resolution: "That this federation take into consideration the advisability of again approaching various societies not parties to the conciliation scheme with a view of getting them affiliated thereto." This was agreed to.

Mr. J. Davidson, of Leeds, moved the following resolution, submitted by the Yorkshire Federation: "That in the opinion of this meeting the cost of accident, health, and unemployment benefits should be borne by incomes instead of by industries; therefore this meeting appeals to the Government to so amend the Act that all expenses of national health, unemployment, and workmen's compensation insurance shall be paid for out of Income-tax moneys, or out of the general taxation, instead of, as at present, by certain selected trades." The cost of workmen's compensation was increasing very rapidly, and it had been estimated that 34 per cent. was due to management expenses of insurance bodies, and 66 per cent. went in compensation. A very large proportion of the sums recovered went to the medical and legal men concerned in the cases. The incidence was entirely borne by the building employer, and not by those who benefited by the Acts.

Mr. W. Shepherd feared that this question was not being considered in a broad and comprehensive manner. In London the obligation of compensation was borne by the building-owner, and not by the contractor. He was with Mr. Davidson in his criticism upon the operation of the present system of compensation, and some legislation was needed to deal with the shortcomings and mischief of the existing Acts. There should be fully qualified and State-appointed medical referees, and restrictions should be placed on legal men employed in compensation cases. The sufferer should be paid directly, and not through his legal representative; but the resolution was based on wrong principles. Mr. Long, of Bath, and Mr. J. W. White, of Sunderland, supported Mr. Shepherd's views.

Mr. George Macfarlane, of Manchester, moved as an amendment omitting the words "Income Tax moneys or out of" from the resolution. Mr. F. L. Dove seconded the amendment, which was accepted by the mover of the resolution.

A member said that the trade-unions would effusively support any motion to place the obligations for compensation on the ordinary Income-tax payer, and the resolution should be withdrawn. This view was supported by Mr. Easton.

After a long discussion it was unanimously agreed, on the motion of Mr. Davidson, to refer the subject of the resolution to the Administrative Committee.

A letter from the British Engineers' Association was read recommending the appointment by the Government of a Minister of Industry. This was referred to a small sub-committee of the executive committee.

Mr. J. Jones, of Treharris, brought forward the following motion submitted by the South Wales Federation:—"That it is desirable that steps be taken to so amend the law that if a freeholder or an assignee, by way of forfeiture, takes over and uses goods or works delivered or executed upon the freehold by direction of the leaseholder, or his agent, in accordance with the requirements of the lease, he shall be required to pay for them on the principle that he who takes the benefit should bear the cost."

Mr. W. Shepherd said action in this matter would involve an amendment of the Bankruptcy Acts, and he suggested that it be referred to the Administrative Committee. Agreed.

Mr. Davidson alluded to the question of

municipal trading and the employment of direct labour by corporations, and read complaints received and correspondence with the Local Government Board. He moved that the whole matter be again referred to the Administrative Committee, with instructions to press the matter, and urged members to adopt a more aggressive policy on this question. This was seconded by Mr. J. Ramsden, of Bury, Lancs, and was carried unanimously.

A report by the Contract Sub-committee of the Executive Council was moved by Mr. Smethurst, of Oldham, expressing dissatisfaction with the delay by the Royal Institute of British Architects in dealing with suggested modifications in the Form of Contract as to the relations of the contractor and sub-contractor. He thought that the Royal Institute of Architects seemed loath to interfere with the present form of contract, and the Institute of Builders felt that some action should be taken. Mr. W. Moffat, of Birmingham, seconded the motion, which was agreed to.

Mr. Moffat then moved a resolution urgently requesting local builders' associations to consider the best methods of securing a satisfactory and approved standard form of contract agreement with their several local authorities, and to report upon the same to their respective county federations or centres within three months. Mr. Amplett, of Birmingham, seconded the motion, and after remarks by Mr. Waring, Mr. Cooke, Mr. Hope, and Mr. Radcliffe, the resolution was carried with an extension of time for a report from three to four months.

The secretary, Mr. A. G. White, read the nominations of officers for the ensuing year of office; A. W. Sinclair, of Scarborough, being the new president, and Mr. W. F. Wallis, of Maidstone, the senior vice-president. Mr. Sinclair, who was elected by acclamation, was congratulated on his marvellous escape during the recent bombardment of Scarborough, and was formally invested with the chain and badge of office by Mr. Thomas, who then vacated the chair in his favour.

In returning thanks for his election, the new President said the past had been a strenuous year, beginning with London building disputes and ending with the present disastrous war. They had been adversely affected also by the moratorium, and the unstable values of materials which had made the position of builders one of grave anxiety, but their troubles had drawn members all over the country more closely together.

A vote of thanks to Mr. Thomas for his courtesy, zeal, and fidelity during his year of office was carried by acclamation, on the motion of Messrs. Bowen and Shepherd, and he was appointed an hon. vice-president.

It was agreed to hold the next half-yearly meeting in one of the Yorkshire towns, to be settled at a later date. The President explained that they had hoped to invite the Federation to Scarborough, but could not at present say whether that would be possible.

THE ARCHITECTURAL ASSOCIATION.

The monthly meeting of the Architectural Association was held on Monday evening at 18, Tufton-street, Westminster, Mr. H. Austen Hall, F.R.I.B.A., Acting-President, in the chair. Messrs. T. G. Crump and H. E. Wilson were elected as ordinary members and Mr. H. Stratton Davis, of Gloucester, as a country member. On the motion of Mr. H. M. Fletcher, hon. secretary, Mr. Philip E. Webb was elected to fill a vacancy that had arisen on the Council.

The Chairman stated that Mr. E. March Phillips was unfortunately prevented by illness from reading his promised paper, and that Prof. W. R. Lethaby had kindly acceded to the Council's request and would give an address, arranged for a later date, on

WHAT ARCHITECTS MAY LEARN FROM THE ENEMY.

Professor Lethaby observed that in some, in many, respects the English must be the most capable and gifted nation on the earth, and there was a form of patriotism which

would rest content in pride of these things. There was, however, also an intenser patriotic pride which hated to fall short in any worthy power or skill, and which would add to what we had of value other qualities in which we failed. There was a patriotism which would have London even as Athens and Florence, and which could not rest until we had "built Jerusalem in England's green and pleasant land." There might be a patriotism so proud that it would disdain to assert its virtues and be content with the acclamations and reverence of other peoples. His right to speak of German architecture and arts and crafts came from having very recently visited the country about half a dozen times, and having seen many of the most important cities, including Berlin. Many years ago he came to the conclusion that Germany was racing; that she had consciously divided up human activities and knowledge into departments, and had definitely set herself to outrun all other competitors in all of them. The guardians and directors of the State had, it seemed, substituted for the old customary methods and detached competitions in arts and sciences a clear and definite purpose of beating down all rivals and surpassing all emulation. This idea was not far-fetched; it was simply the result of bringing in the Prussian war spirit into every phase of life. German archaeology, German industry, German architecture had all been recast, under the dominating desire to attack and to conquer. Let them think what this meant, if it were true, and something like it must be true, that at some time, forty or fifty years ago, the real leaders of the Prussian people should have gathered together in some room and have decided to enter on such a definite campaign. German museums, books, machine industry and factories, the theatres, and all the rest, were to outclass the spontaneous productions of neighbouring states. This being the end in view, all the necessary means were easy to see and to apply. The efforts of other peoples were studied, reported on, and absorbed, and their mistakes were in many instances rectified. For it had been an essential part of the position that Germany, coming into the field as an attacking party, was able to select and experiment in a way that was impossible for those who had been pioneers. It seemed to the lecturer that the Prussian spirit ran to extremes. Even organisation might be over-organised, specialisation too specialised, and thoroughness too thorough. Germany seemed to tend to the unmeasured; there was in the nation—and perhaps they could not help it—a radical outrageousness. One reason for this might be that Northern Germany was never brought within the circle of ancient civilisation. The most striking general characteristics of Germany were those of great size, of the number of cities which were obviously architectural and centres of learning, and of the dignity of the public services, such as the railways and trams. The country had become one Germany from the North Sea to the Adriatic, with a population nearly three times as large as ours. But the dignity of the cities and of the services must be acknowledged and praised. The first thing which we should learn from Germany was how to appreciate English originality. Up to about twenty years ago there had been a very remarkable development of English art of all kinds. For five or six years round about the year 1900 the German Government had attached to its Embassy in London an expert architect, Herr Mathesius, who became the historian in Germany of English free architecture. All the architects who at that time did any building were investigated, sorted, tabulated, and understood. Then, just as English free architecture had arrived, came a drear reaction and the re-emergence of the catalogued styles. It was equally true that the German advances in industrial designs had been founded on the English arts and crafts. They saw the essence of our best essays in furniture, glass, textiles, printing, and all the rest, and, laying hold on these, coined them into money, while our Press, caught up into an eddy of devilish bright writing, set about to kill the whole thing.

Just as we gave Germany many of the industrial ideals which she had so thoroughly exploited—the extracting of aniline dyes, for example—just as she took up the arts and crafts experiments which we employed critics to destroy at home; so we just seemed to have arrived at the thought of an architecture which should develop in its own sphere, and not be for ever casting back to disguise itself in the skins which it had long ago sloughed off, or, like the dog of Scripture, ate its dinner twice over. German architects had seized on this theory of a real architecture, or they had reached it for themselves. Meanwhile, we had been caught up in one of our recurring reactions. Architecture was not seen as one of the forms in which the national energy, intellect, and spirit should expand; but it was divided, maimed, and caged into formulas which were not merely dead, but which had never had life. The second thing in which the lecturer wished we would earnestly compete was public works. There were great things in a nation's life which could not be estimated, and it was quite possible that for a dozen or fifteen years we had been living in the shadow forecast by the present terrible war, and could do no other than we had done. But as soon as possible the English nation must set about public works of every kind. We had just had the recurring Thames Valley floods, by which we were surprised every eight or ten years. These ought not to be allowed by our engineers to occur again and again; but our rivers ought, as on the Continent, to be controlled and guided effectively. Again, within the last week Sir George Greenhill had contrasted the fine equipment, the order, and efficiency of the Military Technical Academy at Berlin with the sketchy and undisciplined condition of Woolwich. There was not the least need why these and other reproaches, due to ill-advised parsimony, should exist in our midst. One thing the Germans had done was to organise a branch of orthodox and scientific economy to deal with arts and industries and the arts and crafts movement. We, on the other hand, had maintained an army of critics at vast expense to write down and decry the arts and crafts, and fatly-paid professors at Oxford, Cambridge, Manchester, and Liverpool to lecture on the margin of economic value. He would suggest that our professional Press should deal with such questions as what were the conditions of public expenditure on fine streets and noble buildings in a city, and how far was it desirable to have clean and organised cities, and how far shabby and miserable ones? He would appeal to the architectural papers to consider for a time public works, not merely to chronicle them, but to ask for them, preach for them, and get them.

At the close of his paper, Professor Lethaby showed a number of lantern-slides of bridges, railway-stations, and business premises in Germany, and called attention to the engineering skill in construction, the economy of materials, the broad treatment, the bold sweeps of lines, the neatness, and the originality of the sparsely-employed ornament which characterised these representative modern structures.

Sir Thomas G. Jackson, Bart., R.A., in proposing a vote of thanks to the lecturer, said that when he first heard the title of Professor Lethaby's paper he was a little staggered. We had not much to learn from the Germans about patriotism. Our patriotism consisted in doing the best we could for our own country, and had never tempted us to vaunt it as supreme; but the tendency of German patriotism was to insist that it ought to include and rule over every other nation. Everyone was to be forced to become German, even in language and in thought, and to be reduced to one uniform pattern. For such a kind of propaganda no Englishman could have any sympathy. The character and merit of German art in the past had been greatly overrated; they had shown an aptitude to learn, but had produced few and in some cases no men of original genius in any branch of art, science, or literature. Their forte was not to create, but to exploit the inventions of other nations.

Germans had an extraordinary faculty for diligently working out and adding to what others had provided or devised. In their own profession they had been distinguished more as archaeologists than as architects. They had a marked talent for order, which was carried into every department of life. Englishmen, on the other hand, had always been a people of individual tendencies; they distrusted all that Government did, and all enterprises were begun and carried out by the efforts of private people. For himself he was an individualist. From the designs of business premises in Berlin and other huge German cities he would admit that we had much to learn from an engineering viewpoint. At the bottom of all good design lay sound construction, and there was no definite line of demarcation between architecture and engineering.

Mr. Martin Shaw Briggs, in seconding the vote of thanks, observed that no German professor could stand up in his own country and deliver a similar appreciative address on the architecture of England, such as that they had just listened to with such interest. He thought the German-constructed schools were much inferior to the Council schools of London; but the German railway stations were impressive in design, and their commercial buildings showed the beginning of a modern treatment of stone and brickwork. They excelled in the use of "staff," in simple treatment of decoration, and had a good knowledge of colour effects. In town planning, again, the German people were very much in advance of public opinion in England.

Mr. C. C. Brewer remarked that the modern architecture of Germany was open to criticism. The treatment of the western spires of Cologne Cathedral was coarse, and the national monument at Coblenz, at the junction of two beautiful rivers, was brutal and even horrible. After all, it was a reflection of the national taste, and was, therefore, interesting, whereas neither the Albert Memorial in Hyde Park nor that to Queen Victoria in front of Buckingham Palace were, to his mind, distinctively English in character. If the national taste of Germany was bad and coarse; then it was right that it should be personified by works at the Coblenz, Derkmald, and the spires of Cologne.

Sir Thomas Jackson pointed out that both these monuments showed that German architects and sculptors were afflicted with megalomania.

Mr. H. H. Statham agreed with Sir Thomas Jackson that the value and influence of German art had been immensely overrated. He could not agree with Mr. Lethaby in his objections to the influence of tradition on architecture.

Mr. H. M. Fletcher read a communication from Mr. W. Curtis Green, ex-President, expressing regret at being unable to attend, and adding: "It is surely one of the ironies of fate that a nation which has at will produced the most universal chaos in the history of the world should be the people who have apparently made the greatest advance in transforming the chaos of the arts and industries into something approaching order. It is remarkable that a nation who in all its history has, so far as we know, never produced any first-class works of art, who has never shown much appreciation of the refinements of beauty or of Nature, who has no originality, who, as we understand it, are without faith, having only one of the attributes of faith—that is, courage—should yet have so many lessons to teach us. Here it is necessary to consider to whom these lessons were addressed. Are they to us as architects or as citizens? Are we to them as the fount of inspiration for the arts? Or for a model in co-operation and organised industry? Doubtless for the last. The appeal of their work, of Mr. Lethaby's words, is to order and discipline. These are qualities to inspire respect, but they are not the stuff out of which beauty is made; beauty is of the spirit. It is remarkable that Mr. Lethaby, with his wide outlook, his appreciation of the elements of essential beauty, should look to the reconstruction of the art

in the study of the commonplace (if I understand him aright), to the sacrifice of the individual search for perfection, to the plane of a common, and even to a vulgar, level of disciplined effort. In the attitude of commerce towards art and science there is much to be learned from the enemy. As architects we have nothing to learn from them that we cannot learn better from some of our fellow-architects, from Mr. Lethaby himself, here at home. New work of theirs that I have seen has that pleasing and deceitful touch of strangeness, that slightly foreign air, that is apt to confuse the student, because every great work of art has a touch of strangeness, but it is a strangeness foreign to the German atmosphere. The truth is that we are beginning to study architecture in the right way—that is to say, we are learning not only from the past, but from each other; the Germans, who have always shown an adaptability to the ideas of other nations, are copying us. For every pleasing illustration of their work we can show a better. What our work lacks is the cohesion given to it by the combination of the building arts with commerce and municipal enterprise. The future might hold a wider and better co-operation between industry and art, between nation and nation: that was surely the tendency of the modern movement."

The Chairman, in putting the vote of thanks, said when he was last in Germany he saw the designs submitted in competition for a Bismarck memorial. Most of those submitted were of the usual coarse and brutal type; but the assessor selected for execution one of refined character and entirely different from the other monuments to be seen in German cities. He thought this suggested that the better-educated people were getting tired of the vulgar type of architecture, and that its exponents were having their last fling.

THE REPORT OF THE LAND INQUIRY COMMITTEE.*

URBAN LAND TENURE.

By J. GEORGE HEAD (Fellow).

Having been honoured by a request from the Council of the Surveyors' Institution to write a short paper on Urban Land Tenure, I feel I cannot do better than follow the Report of the Land Inquiry Committee, with which all surveyors are doubtless familiar. All that is possible in such a paper as the present is to examine the principles underlying both the complaints and remedies proposed for their amendment. In so doing, the questions which present themselves for our consideration are:—

- (1) Whether hardships and anomalies, irremediable by present law, do really exist between the various parties to land tenure;
- (2) Whether such hardships or anomalies are merely such ordinary incidents as necessarily exist in a state of society in which the liberties and desires of every individual are bounded by the rights of his neighbour, or whether they constitute an injustice which calls for legal remedy;
- (3) Whether such legal remedy is practically possible;
- (4) What should be the nature of the tribunal to which the administration of the remedy should be entrusted.

The Report passes comparatively lightly over freehold and copyhold tenures. In respect of the former the chief complaint is of the awkward situation produced by restrictive covenants. As, however, a similar complaint is registered against leaseholds, in a still greater degree, the consideration thereof may be postponed for the moment. In respect of copyholds—which are few in number and yearly becoming fewer—the Committee make certain recommendations as to enfranchisement, which may be profitably dealt with in another paper. Leases for lives are condemned, because, in addition to possessing all the defects of ordinary leaseholds, the element of uncertainty produces results which are highly inconvenient, without the counterpoise of any advantage whatever; they are merely the survival of a

* Two papers read at the ordinary general meeting of the Surveyors' Institution, held on Monday, January 25, 1915.

custom which has lost its significance and usefulness. The system will probably have few defenders. It is against the incidence of the leasehold system as a whole that the Report is chiefly directed, and nearly all the examples quoted are intended to show that between lessor and lessee certain hardships and anomalies exist to the detriment of the latter, and that these call for redress. A summary of complaints will be found in the Report (pages 483-486), and this may be further condensed, as follows:—

- (a) The absence of any fixity of tenure, and the possibility that if the tenant succeeds in obtaining a renewal the rent may be raised in consequence of improvements made at his own expense, and of the goodwill he has created.
- (b) The right of the lessor at the end of the lease to appropriate the benefit of buildings erected by the lessee.
- (c) The right of the lessor to control structural alterations and to extort heavy fines for his consent.
- (d) The right of the lessor to veto assignments or underlettings.
- (e) The right of the landlord to claim for dilapidations, particularly when the property is to be demolished.
- (f) The fact that in addition to the particular injuries inflicted by the arbitrary exercise of the lessor's powers above referred to, the general effect of their existence is to depress the energies of the tenant, and to sterilise his enterprise; and that the system leads to deplorable structural deterioration towards the end of the term.

Several other matters also are indicated, arising out of the covenants of the lease. Looking at these statements as a whole one receives an impression that, typical though the cases given may be, they are somewhat strongly stated from the lessee's point of view. Nevertheless, after allowance has been made for some possible amount of exaggeration, and even of special pleading, in the Report, I fear it is impossible to deny that some of the complaints are justified. Who among us here has not met the avaricious lessor to whom the alleged complaints truly apply? Who has not encountered, for instance, the man who, having a tenant successful in business, desirous of executing alterations, has exacted a heavy fine for his consent, in spite of the fact that the only result of the alteration so far as he was concerned was to make his rent even more secure than it was before? The lessor's power is based upon a covenant inserted in the lease when it was granted, and very properly inserted to prevent the lessee making any alterations to the premises which might depreciate them as a security for the rent; its only object, however, was to protect the lessor's interest from damage, and it was never intended to do anything else, certainly not to endow the latter with a power to refuse arbitrarily his consent to a proposition which may be of vital importance to the lessee. If when the draft lease was submitted for approval it had contained an undertaking on the part of the lessee that he would pay for such consent such premium as the lessor chose to demand, it is obvious that the lessee would have refused the terms, and I submit that the original intentions of the contracting parties might well be a test of the rightness or wrongness of the action of either of those parties, or of their representatives, and that any claim of either party which does not meet that test should be subjected to the severest scrutiny. The same reasoning applies to the necessity of obtaining the lessor's consent to assignments and underlettings. There should undoubtedly be an implied covenant that the consent should not be withheld in the case of a respectable and responsible person being introduced as assignee or under-lessee. These matters seem so obvious that the wonder is that they should at any time be matters of dispute. The explanation, however, lies in the rigidity of the wording of the lease, which affords an opportunity to cupidity to make a profit which was never contemplated when the terms were first arranged.

There are frequently two classes of landlords whose consent has to be obtained, namely, the freeholder and the intermediate lessee, and the writer feels bound to acknowledge that the refusals which occasion so much injury and annoyance are much less frequently received from the freeholder than from the middleman, notwithstanding the fact that the interest of the latter is limited

to the rent payable to him for a definite period of years. From the latter class most exorbitant demands are sometimes received, even when the freeholder has announced his consent—a state of things which especially reveals the necessity of some form of legislation to remove the possibility of its recurrence. We have now, however, to consider a grievance of another class, and that is the case of business premises where a tradesman has built up, by long years of toil, a business upon which he depends for his living, and which is so wedded to the premises and the district that it cannot be shifted far without entire destruction. By the pressure of circumstances, and the requirements of his business, he is frequently obliged to make a large and recurring outlay in extending and improving his premises. He does so not from choice, but because he must keep up to date and abreast of his competitors. Such a man appears to me to have acquired an equitable and substantial right in the premises, a right not of legality nor one which was contemplated when the lease was granted; but the right of necessity, a right which should be respected, and is respected by many just-minded and fair-dealing landlords. The greatest stress is laid upon the difficulties met with by lessees of business premises. Lessees of private houses have not, as a rule, such urgent grievances, as the outlay on their premises is often made in pursuit of their own inclination, and not by the pressure of necessity; but even here an exception may be made in favour of those who are unfortunate enough to hold obsolete property. It is not unknown that leaseholders have frequently to face the situation of possessing a house which nobody wants, and of having an unexpired term too short to rebuild or adapt the building to current needs. Even if they were disposed to do so they would have to obtain the lessor's consent, which may be an impossibility. Unless the lessor will assist by permitting the alterations and by granting an extension of lease such as will make it worth while to incur the expense of making them, the property remains unlet and probably becomes derelict, a condition of things detrimental at once to the lessor, the lessee, and the community at large.

The trouble described in the above paragraph, like so many others, arises from the fact that conditions are continually changing, while the words of a lease and their settled interpretations are rigid. What is needed in the leasehold system is elasticity, so that its undoubted advantages may be preserved and adapted to the changing needs of the community, and this requirement must be borne in mind in the consideration of any scheme which may be suggested to remedy the defects complained of. Enough will have been said to show that the writer considers that the leasehold system as it at present stands is unsatisfactory, in that it does inflict material grievances upon tenants, exposing them to harsh treatment at the hands of landlords who are grasping, and, conversely, that tenants are enabled to make exorbitant demands upon their lessors. In both cases such grievances require amendment.

The most important—or, at least, the most subversive—of the Committee's recommendations is that in which it suggests that matters in dispute should be removed from the decision of the contracting parties to the lease, and should be settled by a tribunal the composition of which will be referred to later. It is suggested that this tribunal should consider all the circumstances and decide upon the course which is fair, preserving to the utmost the rights of all parties—owner, lessor, lessee, occupier, and the community at large; it should decide whether licenses are to be given, and upon what conditions; whether a renewal of the lease is to be granted or not, and upon what terms, both as to rent and length of lease; and it is proposed that in the case of existing leases it should be recognised that lessors should be entitled to the reversionary value of all improvements (except sanitary works) that have been made by the tenant; but that such tenant should have a *prima-facie* right to a

renewal, with the possibility of being awarded compensation in the event of the renewal not being granted. In future leases, however, it is suggested that the improvements made by the tenant should belong to him, and that the renewal rent should not be increased on account of them. The principles here stated contain the essence of the recommendations; the others, with few exceptions, being concerned with the method of carrying these principles into effect. For instance, it is proposed that no compensation should be paid to the lessee unless he had applied for a renewal and been refused, or if he had declined the terms offered by the tribunal; that the lessee might make his application at any time on paying a preliminary deposit for costs which he would have to bear if he declined the terms offered by the tribunal; that the tribunal could refuse his application if it could be shown that the lessor had a better use for the property, in that it was wanted for some public purpose; and that the compensation, if it became payable, might include—

(1) The unexhausted value of tenant's improvements less any diminution of value caused thereby to any other property of the landlord.

(2) Loss of goodwill and damage to trade fixtures through enforced removal.

There are also recommendations treating of matters we have already dealt with, such as granting of licenses to assign and to make improvements, and, in respect of the latter it is suggested that the tenant shall give notice of his intention, when the landlord shall have the option of executing the proposed works at his own cost, and charging interest by way of additional rent. Dilapidations are not to be enforceable when the premises are to be demolished, unless the lessor can prove actual loss. The tribunal is also to deal with easements and apportionments. Much difference of opinion will doubtless exist on these various points; but it will be seen that the transference to the tribunal of power now exercised by the lessor or lessee is the most important innovation, and the one towards which our attention should be mainly directed. The principal objection which is brought against this recommendation is that it interferes with freedom of contract. This is indeed a serious objection; but its force here is weakened by the fact that the lessee is by no means always a free bargainer. Given a large number of premises belonging to different owners, from which the lessee could select, no doubt competition would secure that he should have a free hand; but with regard to urban properties in particular, it is frequently the case that they form a part of a large estate owned by one proprietor, and the lessee has only the choice of accepting the terms offered or of going elsewhere. Even admitting, however, that the proposed change does involve some interference with freedom of contract, we must not lose sight of a principle of even greater importance; I mean the fundamental truth that the good of the community is the *very raison d'être* of all our laws, and that liberty itself consists in the restriction of individual power, so as to conform with this principle. In our own practice we find the right of private ownership continually modified when it conflicts with public convenience, not only in the case of public undertakings, when compulsory powers are granted, but also where it can be shown that the rights of important sections of the public are concerned. The successive Agricultural Holdings Acts, culminating in the Act of 1908, are so many steps in the transfer of the right to tenant's improvements from the landlord, to whom they originally passed, in deference to the old principle of "*Quicquid plantatur solo, solo cedit*," to the tenant at whose expense they were executed. There is, therefore, ample precedent for the proposed interference with individual rights set up by and implied in contracts, and for the recognition of what we have termed the "*right of necessity*." A strong point in favour of the settlement of disputed matters by a tribunal is that by this means the chief defect of the leasehold system—viz., its inflexibility—would be removed, and the situation created

by changing conditions could be dealt with far more effectually than by merely legislating for amendment of the existing defects. Whatever the terms of such legislation, those terms would in time become obsolete, so bringing about a recrudescence of the present trouble. By its flexibility the tribunal would obviate this difficulty and provide a permanent means of settling all disputes which could possibly arise.

It is suggested by the Inquiry Committee that the tribunal should take the form of a Board of Land Commissioners, while others consider that the work should be done by the law courts. The latter argue that it is inadvisable to set up a tribunal outside the machinery of the law. Obviously it is necessary that the tribunal should be permanent in its nature and official in composition, in order to insure uniformity and consistency in its decisions; but, on the other hand, the questions to be settled are so various and technical that the best professional skill is requisite to arrive at a satisfactory conclusion. To combine these desiderata I suggest that a panel of surveyors and valuers should be selected, containing representative men from every district in the kingdom; these gentlemen could be attached as assessors to an official Court, and from that panel selections could be made by the Court, according to the district and to the nature of the matter under consideration. By this means would be secured the highest professional skill, combined with the consistency and impartiality of the courts of law, and, further, a tribunal so constituted would not be open to the objection of being outside the ordinary machinery of the law. It now only remains to consider whether the establishment of such a tribunal would react unhealthily on other departments of the law of contract, and to this question the answer appears to the writer to be in the negative. The relations we have been considering of lessor and lessees are merely an instance of two or more persons possessing a common and frequently divergent interest in the same subject, and, as such, are akin to the case of party structures. Here the cause of dispute is removed from the sphere of the respective owners, and the settlement is left to an outside tribunal of two surveyors, and a third approved by these. This procedure works smoothly and satisfactorily, and does not react injuriously on any other procedure. The best test of this is to compare the ease and certainty of an equitable settlement which characterises party structure matters arising in the London area, where the surveyors' tribunal applies, with the difficulty, discomfort, and frequent litigation arising on similar subjects outside that area.

In conclusion, since the defects inherent in the leasehold system are admitted, and a general desire is expressed to amend the same, it follows that any scheme which furnishes a fair and impartial settlement is worthy of the most patient consideration, for we must one and all be convinced that it is an end devoutly to be wished that landlords and tenants should feel that their respective rights are mutually respected, and should recognise that the welfare of both is the truest interest of each.

[We shall give a second paper, read on Monday evening, by Mr. Joshua Bury, F.S.I., next week.]

THE LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council, a report of the Building Acts Committee was submitted, reporting that a statement had been prepared of premises in London occupied by alien enemies which are strategical positions, or which might be used for military purposes, and a copy of the statement has, by request, been forwarded to the proper authorities.

The same committee reported that during the three months ended on December 31, 1,349 notifications were received with regard to structures which were alleged to be in a dangerous state. In accordance with the provisions of Part IX. of the London Building Act, 1894, a survey was made in each case. In 198 cases it was found that

the structures were not in a dangerous condition, and, consequently, no further action was necessary. In 1,151 cases notices were served upon the owners requiring the removal of the danger. In order to secure compliance with the Council's notices it was necessary in some cases to obtain orders from magistrates, and in 31 cases in which such orders were not complied with, the Council's contractors took down the dangerous portions of the structures. As a temporary expedient the committee arranged for 42 structures to be shored up or hoarded in by the Council's contractors. Surveys were made of forty-eight structures which were alleged to be in a dilapidated or neglected condition. Proceedings were commenced for obtaining the demolition or repair of 34 structures, and 22 structures were demolished by the owners on receipt of the Council's notices.

The Improvements Committee reported that they had taken steps for the acquisition from the South-Eastern Railway Company of a portion of Nos. 9 and 10, Strand, required for widening the road to a width of 80ft. Provision was subsequently made for settling the price to be paid by arbitration, as it was not possible to do so by agreement. Under the arbitrator's award the company were entitled to receive £18,330, and nothing more. This in effect disallowed any sum by way of compulsory purchase. The arbitrator made a further finding of facts as to the building site belonging to the company, consisting of Nos. 9 and 10, Strand, and some houses in the rear, to the effect that if the true measure of purchase money and compensation to be paid by the Council was the difference between the aggregate value of the Strand land and Craven-street land before and after the service by the Council of the notice to treat and the taking of the strip of land for widening, then the purchase money and compensation was £3,465. The company having issued a writ with the object of enforcing payment of the sum of £18,330, the matter came to trial, and was argued on behalf of both parties before Mr. Justice Eve on December 15 and 16, and judgment was delivered on December 21. In the result his lordship found that the amount properly payable by the Council was £18,330, and he made an order accordingly with costs against the Council. Having regard to all the circumstances the committee were of opinion that an appeal was desirable.

The Housing Committee recommended the erection of dwellings upon the first section of the Tabard-street area, Southwark. They propose to erect 120 tenements, containing 310 rooms, exclusive of sculleries, charging an average rent of 3s. 1d. a room per week. The total capital outlay involved is £33,282, of which £4,700 represents the housing value of the land to be appropriated. The recommendation was adopted.

The Stores and Contracts Committee reported that, as the result of inquiries with regard to firms controlled wholly or largely by enemy aliens, whose tenders or quotations had been accepted by the Council, they had decided to have no further dealings with 28 such firms, and their names had been removed from any lists of firms to be invited to tender.

Reporting that directions have been given for the Council's new coat-of-arms, to be displayed on the blank shield appearing in the design of the Council's seal, the General Purposes Committee stated that the question of a motto for the Council has been adjourned until the conclusion of the war.

It was resolved, after long discussion, by the narrow majority of 48 votes to 45, that the tramway tracks in Liverpool-road, Islington, the working of horse-cars on which has been discontinued for some time, be removed and the paving of the carriageway reinstated. The Highways Committee, submitting the recommendation, reported that the cost of reconstructing the lines on the conduit system would be about £50,000, or on the overhead system about £30,000, while it was estimated that but little additional revenue would accrue as the result of electrification.

OBITUARY.

The news has reached his relatives in Bath of the death in Rangoon of Mr. H. Seton Morris, F.R.I.B.A., youngest son of the late Mr. Joseph William Morris, one of the best known citizens. Mr. H. S. Morris studied for his profession under Mr. W. J. Wilcox and his late uncle, Mr. Charles Phipps, the well-known theatre architect. He became an Associate of the Royal Institute of British Architects in 1909, and last year was elected a Fellow. He left an appointment at the War Office four years ago to become consulting architect to the Government of Burma. He was only 45 years of age, and leaves a widow and two young children.

We regret to record the death of Mr. Francis Thomas William Miller, the well-known quantity surveyor, whose office for many years was in Dartmouth-street, Westminster. He was elected an Associate of the Royal Institute of British Architects in 1881, and joined the Architectural Association in 1884. Mr. Miller took an active interest in local politics, and was long associated with the Acton District Council, by which authority he was constantly employed on surveys and quantity work. He became a member of the council, and served his turn of office as chairman some time ago. The conditions for the original competition for the Acton town hall and municipal buildings were practically drawn up by him when he was on the works committee, and although that competition ended in a fiasco and a lawsuit, it is but fair to state that the requirements embodied in the conditions were so clearly and fairly set out that the document itself really formed a model set of conditions, the cost being fixed by a given price per foot cube to work to. Mr. Miller died at his residence in the Avenue, Bedford Park, on Thursday, the 21st inst., in his 70th year. Last September he had a seizure at the Bedford Park Club, and since then had been confined to his room suffering from a long critical illness which proved speedily fatal after a second attack during the early part of last week. The deceased had a considerable practice in surveying and quantity work, being well known to many architects chiefly concerned in institutional, school, and workhouse buildings. Hammersmith Workhouse was a notable instance, while some matters concerning that contract came before the Law Courts. For years he edited Lockwood's "Builder's Price Book." Mr. Miller also possessed no little skill with the brush as a water-colourist; he was of a literary turn, well read, and evinced a critical appreciation of high-class music which few of his friends suspected. Shortly before his death he acted as hon. secretary of the Bedford Park Gardening and Natural History Society, and on one occasion he was elected its president. Mr. Miller leaves a widow, but no children.

The Columbus (Ohio) Chapter of the American Institute of Architects has elected the following officers:—President, Mr. C. W. Bellows; vice-president, Prof. Charles St. J. Chubb; secretary-treasurer, Mr. George H. Bulford; executive committee, Messrs. J. W. Thomas, A. M. Allen, F. L. Packard, and Prof. J. N. Bradford.

A new Roman Catholic church is approaching completion at Chesham Bois, Bucks. The architect is Mr. Arthur Young, of South-square, Gray's-inn. The edifice will be a small village church of Late Perpendicular character, consisting of nave, sanctuary, and sacristy, roughcast walls, and tiled roof, surmounted by a wooden bell-turret capped with a pyramidal spirelet. The general appearance will be typical of the smaller country churches not uncommon in South Bucks.

Plans are being prepared for the United States Government for the new office building for the Interior Department, which will be erected at Washington, D.C., on the block bounded by E and F and Eighteenth and Nineteenth streets, northwest, for which an appropriation of 2,500,000dol. has been made. A Chemistry Department is also to be erected for the U.S. Government at Washington, D.C., at an estimated outlay of 200,000dol.; in this instance the architects are Messrs. Donn and Denning, of 808, Seventh-street, N.W., Washington.

Building Intelligence.

BEDRULE.—Bedrule Parish Church, after being considerably altered and reconstructed, was reopened last Sunday. The reconstruction scheme, which has greatly improved and beautified the church, is entirely due to the generosity of Sir Robert Usher, Bart., of Wells; and under the supervision of the architects, Messrs. Leadbetter, Fairley, and Reid, Edinburgh, the work has been carried out. The accommodation has been considerably increased through the erection at the west end of the edifice of a tower, in which there has been placed a gallery, while on the north and south sides of the nave transepts have been extended. At the east end is the chancel, with the Communion table, etc., an oak pulpit having been placed against the chancel arch, and mullioned windows on the north and south sides give the building a well-lighted appearance.

PLYMOUTH.—The Wesleyans of the Plymouth district have entered upon a considerable extension of their work among soldiers by their scheme for establishing at Crownhill a permanent home for troops. Three foundation-stones of the new home were laid on Monday. When completed, in June next, the home will be double-gabled, half-timbered front, with a verandah. It is to be built of limestone with pebble-dashing on the outside. The accommodation will constitute a large entrance hall, with refreshment bar and cosy corner; a billiard-room for two tables, a reading and games room, a devotional room, two bathrooms, caretakers' quarters, and the usual offices. Mr. G. B. Turpin is the builder, and Messrs. S. W. Haughton and Son are the architects.

SALTLEY.—At the meeting of the Birmingham Education Committee to-day (Friday), the sites and buildings sub-committee will recommend that plans be approved for the erection of a new Council school in Nansen-road, Saltley, at an estimated cost of £17,815, plus £400 for the caretaker's house and £1,100 for furniture. Accommodation will be provided for 1,200 children, the boys and girls being housed in a two-story building and the infants in a detached block. The classrooms will accommodate 50 children in each, and they will be connected with an assembly hall by means of a central corridor. There are also special workrooms and centres for instruction in manual and domestic subjects. For the present it is only proposed to erect the two-story portion of the school as a mixed department and an infant department, together with the special centre and workrooms. The outbuildings, boundary walls, and caretaker's house will be included in the first contract, which is estimated at £13,200, plus £800 for furniture.

Mr. Reginald Blomfield, R.A., ex-President of the Royal Institute of British Architects, has been elected Membre Correspondant du Société des Architectes Diplômés par le Gouvernement Français.

A chapel and lodge are about to be built at the new cemetery of the Surbiton Urban District Council. Mr. Bannan is the architect, and the contract has been taken at £2,021 by Messrs. Myall Brothers, of Southend-on-Sea.

The town council of Sunderland have decided to proceed with the erection of the new Bede collegiate school on the Barnes estate at an estimated outlay of over £40,000. It was stated that increase of expenditure will probably make them 10 per cent. above the original estimate, owing to the increased cost of building materials.

An order of discharge was granted in the Bankruptcy Court on Wednesday to Mr. G. C. Johnson, lately in business in partnership with Mr. A. C. David, under the style of Roberts, Adlard, and Co., of Bermondsey, S.E., as slate merchants. It was stated that the assets so far had realised £12,901, and that proofs of debts likely to be admitted had totalled £19,649. Eleven shillings in the pound had been paid as a dividend, and a further distribution of a shilling or eighteenpence in the pound was possible.

Corrente Calamo.

The land development taxes of the Great Budget, although they looked well enough on paper, never came to much in practice. Indeed, it is probable that the money they brought in did not pay the costs of the litigation arising out of the efforts needed to decide their meaning. The latest case in the High Court (tried on January 27) is really a bit of very good comedy. There was a piece of land upon which nothing was being built or done, so it was assessed to this tax as being undeveloped. But the owner objected, on the ground that he was himself a developer of land! So he claimed to be exempt, because his undeveloped land was being "used" by him *bonâ fide* in his business as a land developer. It was a pretty point. Possibly the owner had an office on the land, or it may be that he kept it lying idle, as a sample of what he could do later on in the way of land development. The Referee, however, held that the land was not, as land, being "used *bonâ fide* for any business, trade, or industry other than agriculture," and so it was assessed for duty under the Act. The owner appealed, and Mr. Justice Rowlatt now confirmed this ruling. He held that it was too clear for argument that, to come within the exemption, the land must be used as land in the way of some business—used, in fact, physically. Therefore, the holding of land by the owner as a developer of land, whether as a sample or a marketable commodity, did not constitute such a business use of the land as would bring it within the exemption.

One of the most sensible and legitimate inducements to recruiting we have noticed yet is that made last week at a meeting in the Vale of Neath by Mr. Godfrey Williams, of Aberpergwm Colliery, a landed proprietor, of ten freehold building plots to be given to the first ten men who enlisted that night, the only condition being that the applicant should build a dwelling-house within a reasonable period. At the close of the meeting the plots were immediately appropriated. More might be done in this direction not merely by patriotic landowners, but possibly by the Government itself, at any rate as more substantial rewards for gallantry on the field than mere badges or titular distinctions.

The comments of the "Journal of the Imperial Arts League," on the practices of some art publishers are very much to the point. In the case cited a lady member of the old Water-Colour Society sold a sketch to a dealer for £6 of a pergola with roses and a flower-border. About eight years after it was brought by a friendly frame-maker to her to identify it. There was an addition to the sketch of three figures and a cat, and on inquiry the price of the sketch, it was found, had been increased to £15. Unwilling to permit the sketch as then altered to be sold as her work, the lady decided to purchase it herself and restore it to its original condition. A lawyer's letter only elicited an evasive reply that if the figures had been added there could have been no intentional injury, but that they knew nothing about it, though perhaps the drawing had been "freshened up." If the facts are as stated, it would seem that the publishers were not aware of or ignored the fact

that by both the old and new Copyright Act the right of an artist to forbid alteration of his work after sale is distinctly guarded. It is not easy always to prove the offence, as we pointed out when the new Act of 1911 was passed; but it is time a case was tried, and we are glad to hear that the creation of a fund for the purpose is being set on foot, and hope it may not be long before the League may be able to protect artists from such illegal action.

The cause of streaks on lath-and-plaster walls is obscure. We lately met with a case which puzzled us, which we were quite unable to trace to any of the usual suggested explanations, and are, therefore, interested in a note to "Nature" by Professor Thomas D. Cope, of the University of Philadelphia, who has been examining the phenomenon. Possibly some of our own readers may be able to help elucidate the matter. Most of us will confirm Professor Cope's observations, which are as follows:—(1) The striations are accumulations of dust upon the surface of the plaster. They may be wiped off with a cloth. (2) The phenomenon occurs only on warmer surfaces of walls which are exposed on the other side to out-of-doors or to colder rooms. (3) The steeper the temperature gradient through the wall, the more pronounced is the phenomenon. (4) The light streaks, the spaces comparatively free from dust, occur over laths and joists, the dark streaks over the spaces between them. Poynting and Thomson ("Textbook of Physics: Heat," p. 152) suggest "that the phenomenon is a probable illustration of 'radiometer action.'" The areas of plaster backed up by wood are probably warmer than those areas not so protected. From the supposedly warmer area an approaching dust particle is repelled by a more vigorous molecular bombardment than it encounters upon approaching the supposedly colder area. Professor Cope is led to inquire whether this explanation is a complete one upon observing what appears to be a related phenomenon. In a room rather free from dust, but quite damp, the areas of plaster which ordinarily would be streaked with dust were quite clean, but were much discoloured by water. This observation raises the question as to whether condensed water-vapour may not be the trap which catches the dust. Professor Cope contemplates carrying out a series of experiments to answer the following questions:—(1) Under given conditions, what difference of temperature exists between a plaster area backed up by lath, and an adjacent area not so protected? (2) What part does the presence of water-vapour in the air play in the phenomenon? (3) Can a "reversal" of the phenomenon be produced?

As a result of conferences arranged by the English Forestry Association with the Surveyors' Institution and the Royal Institute of British Architects, and in conjunction with other societies, energetic steps are being taken to encourage the demand for English oak in place of Austrian for purposes for which the native timber is eminently suitable. Owing to the recent sales of estates and other causes, there are large supplies of English oak and other native timber available, and the English Forestry Association trust that at a time like the present they may rely on the cordial co-operation of all interests to assist in placing the native timber in a position to which it

is justly entitled by reason of its valuable properties. There are large supplies of native timber available, and a unique opportunity offers to assist in making good a shortage of any timber owing to the effect of the war, which steps will not only help home industries with supplies, but will also much encourage the proper production of timber in this country. Frequent applications are received by the English Forestry Association for the names of those who can supply native timber and goods manufactured therefrom, and firms are invited to write, with particulars of stocks of native timber which they hold, or as to contracts which they could take up. The Association will willingly give every assistance where any difficulty is experienced in obtaining supplies of ash or other timber, and place merchants in touch with estates whence the timber can be obtained. The English Forestry Association is not a trading association, and does not buy or sell timber or goods direct or on commission. Its work is to create the demand and to organise supplies of the native timber, and to encourage home industries, but leaving it to the recognised channels to negotiate and supply the demand. All communications should be addressed to the Hon. Secretary, English Forestry Association, Farnham Common, Slough, Bucks.

It does occasionally happen that unparalleled success in the higher branches of art-and-craftsmanship is apt to convey an impression that the general practice and application thereof is beneath the attention of the artist or craftsman, although his name may be known all the world over as a master of his art. We find it so in the case of some of our leading manufacturers as well. The late Mr. Joseph Kaye, whose fame was unchallenged as the inventor and designer of some of the best-known guarantees of the safety and security of our buildings, was especially well reputed for the excellence and ingenuity of his "Automatic" Bolt, his "Push-and-Pull" Lock, "Door" Porter, "Panic" Fittings, Automatic Safety Railway Carriage Lock, etc. Their wide adoption and great reputation seem to have given the impression to some architects and builders that Messrs. Joseph Kaye and Sons are makers solely of specialties, and, consequently, are incapable of, or indisposed to, undertake the fitting up of a building of any size throughout with such and other kindred appliances. Messrs. Kaye hope that the fitting up throughout with their turnlocks, door-furniture, art metal, etc., made at their works at Leeds, for the following buildings, will dispel this mistaken idea: The new London premises of the London and Lancashire Fire Insurance Co., E.C.; the Fleetway House, E.C.; Storthes Hall Asylum, Yorks; City of Leeds Training College; the new Law Courts, Kingston, Jamaica; fifty police-stations, and about 200 banks in the United Kingdom and abroad, have all been so fitted. Briefly, Kayes can fit up a mansion throughout with the same facility as they can supply a "Press Centre" Night-latch for a front door. We need hardly remind all concerned that this not only saves precious time, but insures the best work throughout a building.

Mr. Daniel Chester French, of New York, has been unanimously selected to model the statue of Abraham Lincoln, which will be placed in the Lincoln Memorial building now being erected in Washington, D.C.

Our Illustrations.

THE NEW EXCHANGE BUILDINGS, SWANSEA.

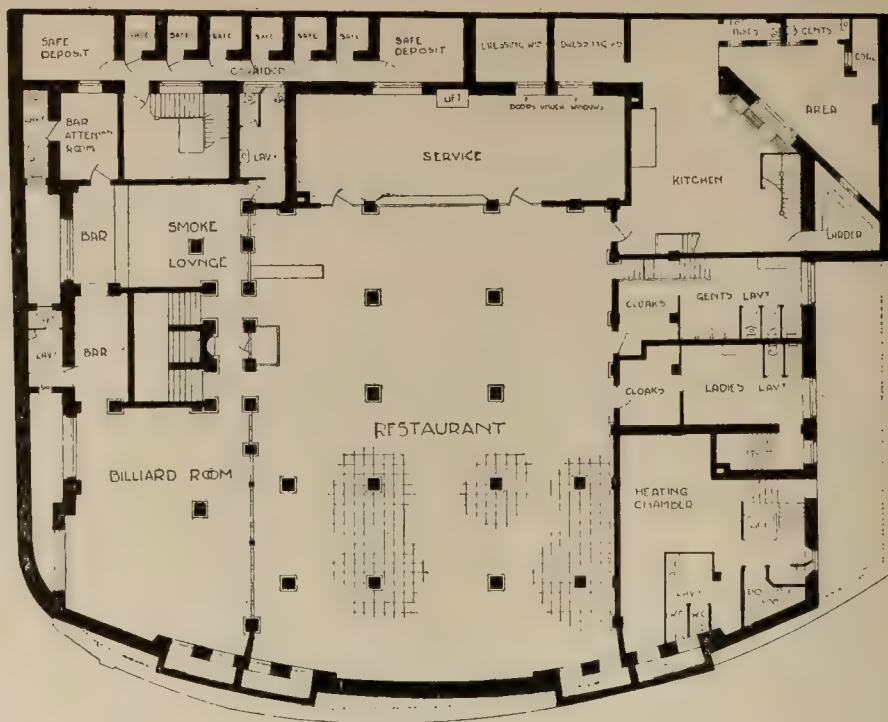
These new premises were opened on Friday last, the 22nd inst., by the Right Hon. Sir Alfred Mond, Bart., M.P., who, besides being the chairman of directors of the Swansea Exchange Buildings, Ltd. (the company formed to carry out the new works), is also the retiring president of the Swansea Chamber of Commerce. The new premises have been erected upon the site formerly occupied by the old Chamber of Commerce premises, certainly a somewhat dilapidated structure, which in turn had originally been the Old Burrows Chapel. The general treatment by the architect aims at giving an appearance of dignity, essential for a building of this character. The site centuries back formed a portion of the foreshore washed by the tide, consisted mainly of sand, and the level necessary for the lower ground-floor level is actually 7½ in. below high spring-tide level. The treatment of the foundations and walls encircling the lower ground-floor premises came in for very special consideration. A reinforced-concrete raft has been laid upon the entire site, and the whole of the upper floors, stanchions, and constructional portions have been carried out in reinforced concrete. The main entrance, in the centre of the Adelaide-street façade, gives access to the lower ground-floor, which has been specially designed for use as a restaurant, the large dining-room being capable of seating some 600 persons. The floor has been laid with Belgian white and black marble tiles 21 in. by 21 in., and the reinforced-concrete columns have been encased in very beautiful Italian marble. All the walls have been panelled to the full height in white wood, and the extensive use of silvered plate-glass adds considerably to the light and brightness of this floor. Billiard-rooms, bars, stillrooms, lavatory, and other accommodation has been provided. The main entrance to the upper ground floor is in Cambrian-place. Upon this floor premises for the docks, post-office, several large shipping firms, and for the Swansea Chamber of Commerce have been provided. The central hall, for the use of the members of the chamber, is a particularly fine room, centre-lighted by means of a fine stained-glass dome, and panelled to a height of about 9 ft. in oak, with council chamber adjoining, together with secretary's office; porters' room, etc., form very convenient premises for the large "Change" business of the important port of Swansea. The first, second, and third floors have been planned as office floors, and contain some eighty offices. These floors are served by two main entrances, one in either street, and also by an automatic press-button lift at each entrance. The cost of these premises has been about £30,000. The contractors, Messrs. Henry Billings and Sons, Swansea, and the architect, Mr. Charles T. Ruthen (Swansea), in association with Mr. E. G. Allen. We give the two chief plans, with a main cross-section.

NEW BRIDGE STREET HOUSE, BLACKFRIARS, E.C.

The front portion of this building stands on what was originally the bed of the "Fleet," and this circumstance necessitated the carrying down of the foundations to a good bottom some 30 ft. below the level of the street. New Bridge-street House is situate on the east side of that thoroughfare and backs on to the South-Eastern and Chatham Railway. The building is occupied by H.M. Office of Works, and has a frontage of 107 ft. The façade is finished in Portland stone. The architect is Mr. R. Angell, of Keith House, Regent-street, W., and the builders were Messrs. G. Godson and Sons.

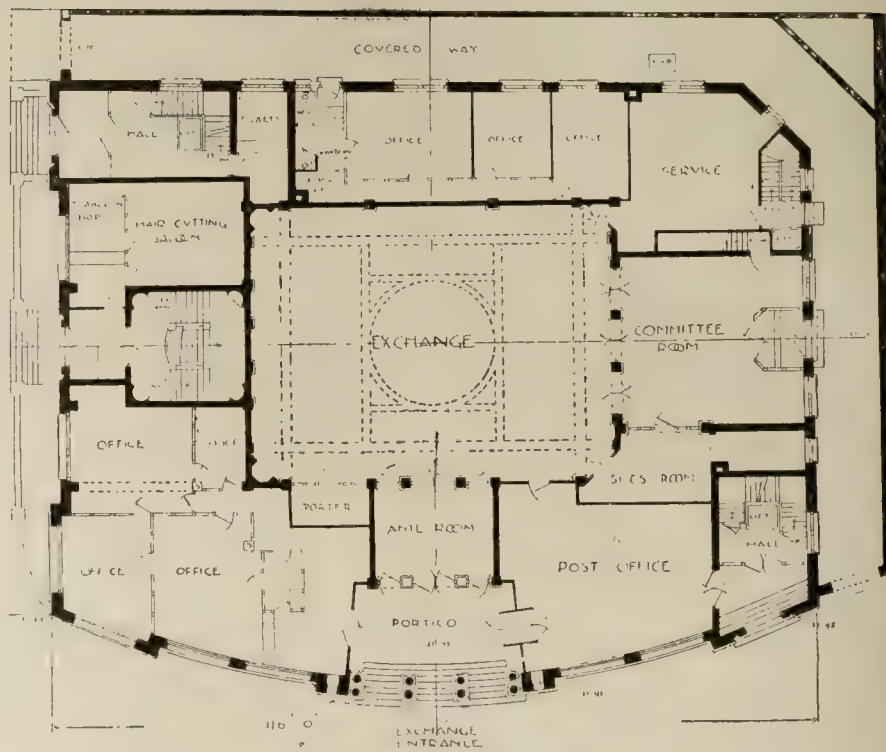
THE CUNARD BUILDING, LIVERPOOL.

We gave last week the elevation and detail of doorway of this important building, and now give a plan and longi-



• LOWER GROUND FLOOR PLAN •

SWANSEA NEW EXCHANGE BUILDINGS: RESTAURANT PLAN.



• UPPER GROUND FLOOR PLAN •

SCALE OF FEET

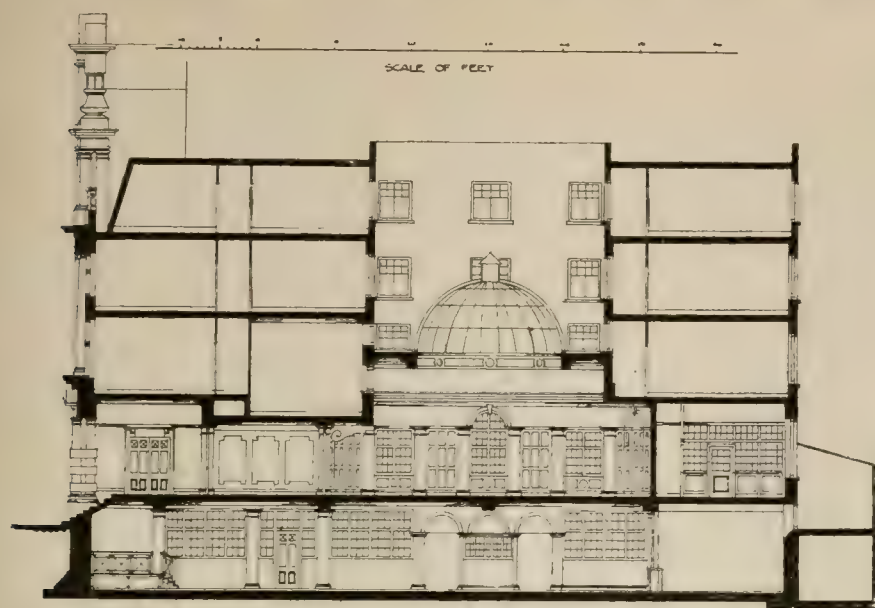
SWANSEA NEW EXCHANGE BUILDINGS.—Mr. CHARLES T. RUTHEN, Architect.

tudinal section. The building is placed on the site of the old George's Dock, facing the river by the landing-stage, the bottom of which was some 34 ft. below the street level. The concrete foundations are being taken down to the rock, which at one end was 14 ft. below the bottom of the dock. The structure of the building, including the floors and the roof, is of reinforced concrete. The facing will be of Portland stone, the rusticated portions being of Roach stone, the rest of Whitbed. The design is based on Italian Renaissance. The building is being executed by Messrs. Holland and Hannen and Cubitt's, Ltd., from the designs of Messrs.

Willink and Thicknesse, F.F.R.I.B.A., of 14, Castle-street, Liverpool; Messrs. Mewes and Davis being the consulting architects. The size of the building is about 330 ft. by 200 ft.

NEW POST OFFICE, NORTHAMPTON.

The new post-office site is situate near the Guildhall, having frontages to St. Giles-street and Derrogate. The main and public entrances are in St. Giles-street, where the building has been set back to the new building line fixed by the corporation for the future street-widening. The elevation to St. Giles-street, as illustrated, is faced with Ketton freestone, backed with local



• SECTION • C • D •

SWANSEA NEW EXCHANGE BUILDINGS. Mr. CHARLES T. RUTHEN, Architect.

bricks, which latter are also being used for the rear facings. On the ground floor are the public and sorting offices, boy messengers' and male staff retiring-rooms. The public office will be 40ft. by 25ft., with terrazzo floor, antique tile walls, and teak joinery. Every facility will be afforded to the general public for telephone calls and telegrams, in addition to the ordinary postal business. Accommodation is provided on the first floor for the postmaster, superintendent, writing staff, testing apparatus and batteries. The second floor contains the telephone switch, engineer's room, and the retiring-room, exchange staff, etc. Accommodation for trucks, stores, and heating apparatus is provided in the basement. There is a spacious mail yard

at the rear of the site, with entrances to Derrgate. The building was designed by, and is being erected under the supervision of, Mr. A. R. Myers, A.R.I.B.A., of H.M. Office of Works, with Mr. J. E. Blick as resident clerk of works. The general contractors are Messrs. E. Brown and Sons, of Wellingborough.

NOS. XIV. AND XVI. GREAT PORT-
LAND STREET, W.

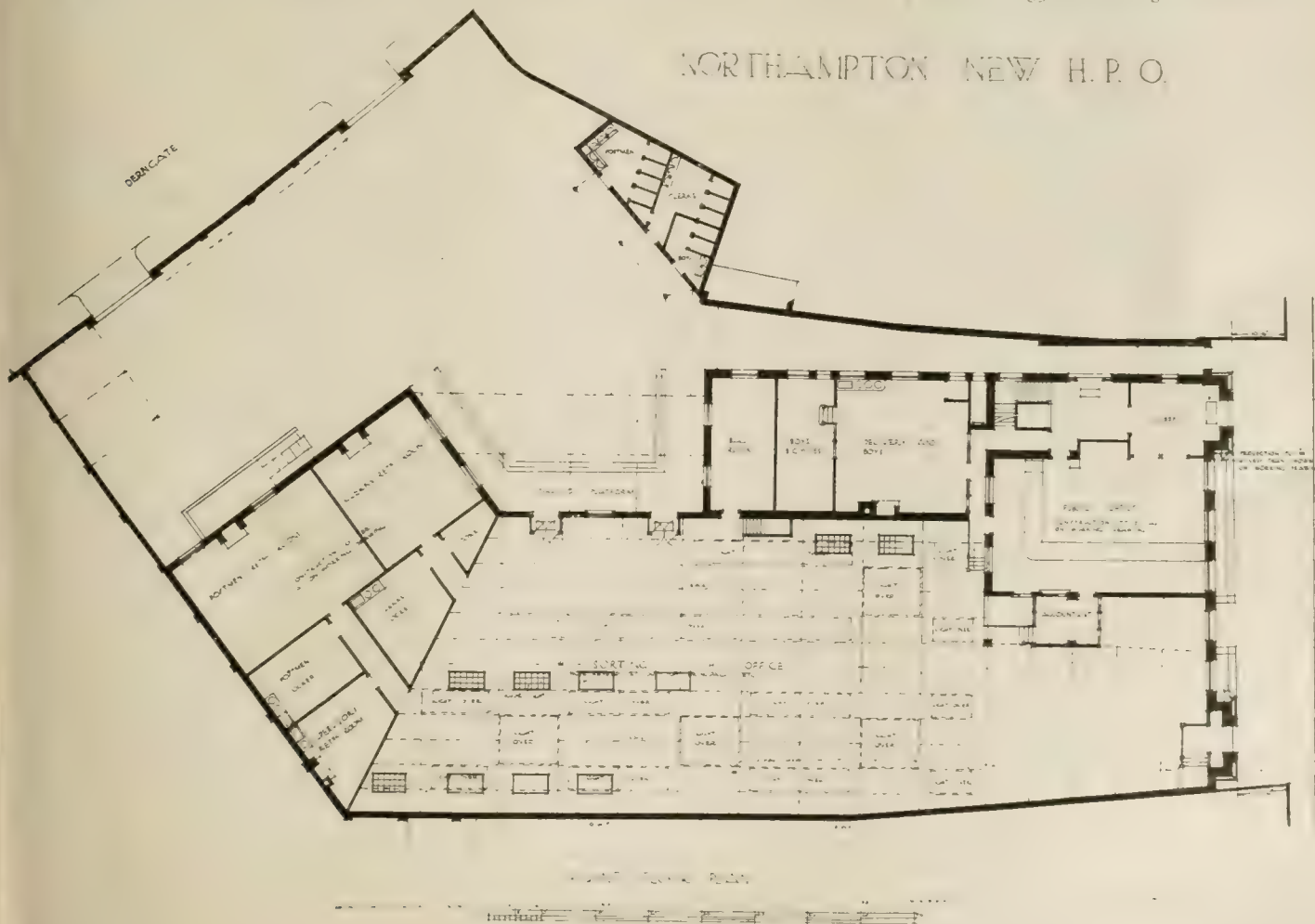
These business premises have been erected for Messrs. D. F. Cocks and Co., Ltd. The front is executed in Portland stone. The windows are fitted with steel casements, those on the ground and first floors being coated with copper deposit. The structure

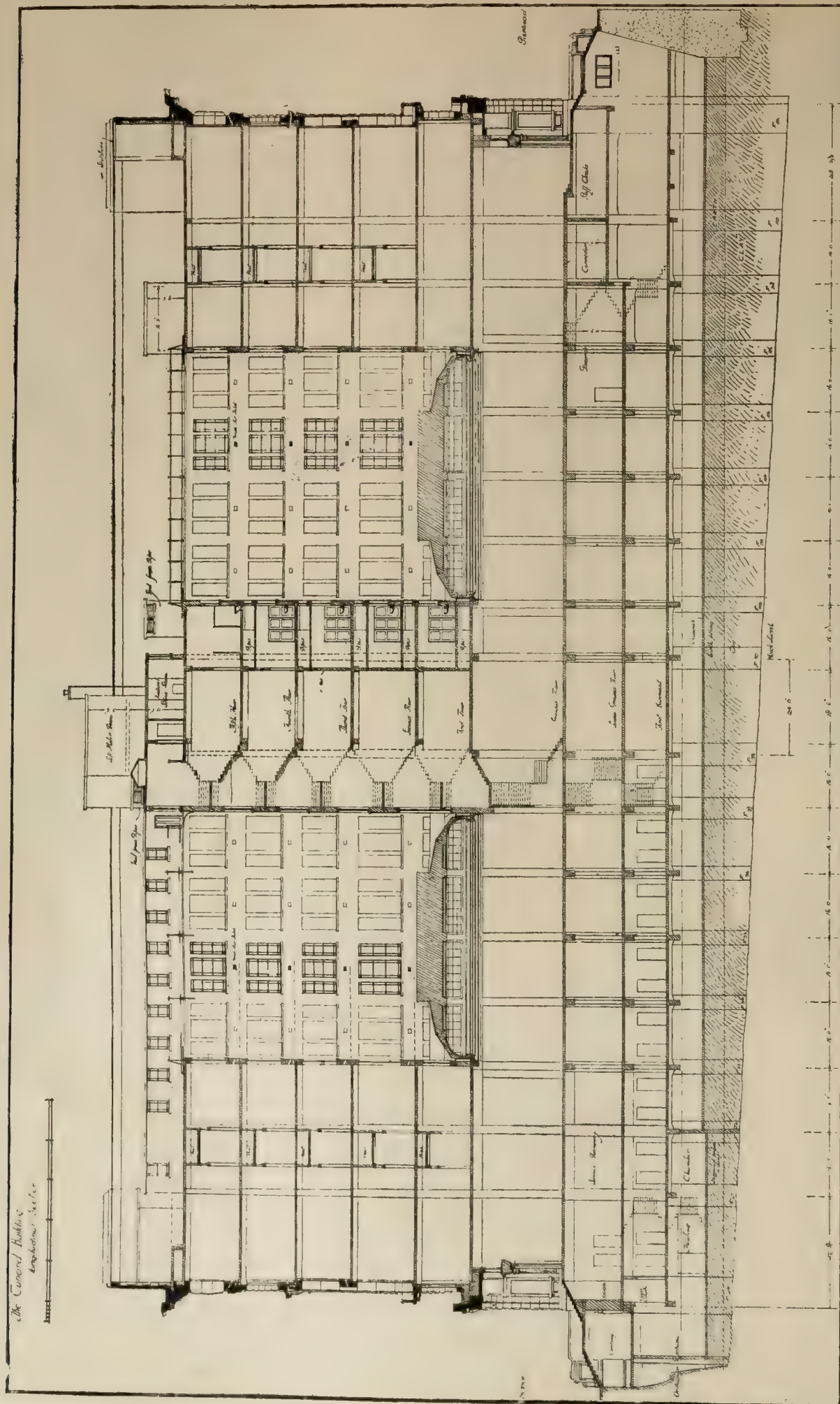
is of fire-resisting construction. Messrs. Hall, Beddall, and Co. were the contractors, and Mr. Ernest Flint, F.R.I.B.A., of 80, Coleman-street, E.C., is the architect. The adjacent building was also carried out some few years since for Messrs. Bastin, Merri-field, and Co., under the superintendence of the same architect; but old heights had to be conformed to—hence the difference of levels with the adjoining premises now illustrated.

The new Liberal clubhouse at the Market-place end of Fore-street, Hexham, was opened by Mr. R. D. Holt, M.P., on Friday. On the ground floor there is a billiard-room containing three tables. At the rear are storage-rooms for cycles. On the first floor there is a lecture hall (with movable partition) seated for over 200 persons. There are also a lounge and reading-room, and a ladies' room. On the second floor are two games-rooms, in addition to the offices of the divisional secretary.

Mr. Alexander Young, a sculptor who has been executing the statutory groups on the new Guildhall and Law Courts at Hull, was found dead on Saturday on the scaffolding on the tower of the Guildhall, near the carving on which he had been engaged. The distance from the ground was 130ft. The deceased is believed to have been taken ill and collapsed and died. When it was found he did not return on Friday night, the tower was ascended, and his body was found. He belonged to Edinburgh, and had been engaged on the carvings for the Hull municipal building, under aid from cartoons by Mr. H. Hodge, of London, for nine years past.

At the last meeting of the Hampshire Education Committee held at Chichester, the architect reported that out of the eleven assistants in his department five had left owing to the war, and two more were going; time equal to 31 weeks of one man's time had been lost in consequence, and this has greatly hindered proceeding with the plans and quantities in hand. The chief draughtsman's appointment was being filled; but it was impossible to obtain junior draughtsmen. He suggested that the salaries which had not been spent might be used temporarily to increase the salary attached to such appointments, or used otherwise as might be necessary to secure temporary assistants. The architect's suggestion was agreed to.





LONGITUDINAL SECTION OF THE CUNARD BUILDING, LIVERPOOL, SHOWING METHOD OF LIGHTING.

Messrs. WILLINK and THICKESSE, F.F.R.I.B.A., Architects.

(Messrs. MEWES and DAVIS, Consulting Architects.)



NEW EXCHANGE BUILDINGS,
SWANSEA.

CHARLES T. RUTHEN, ARCHITECT.



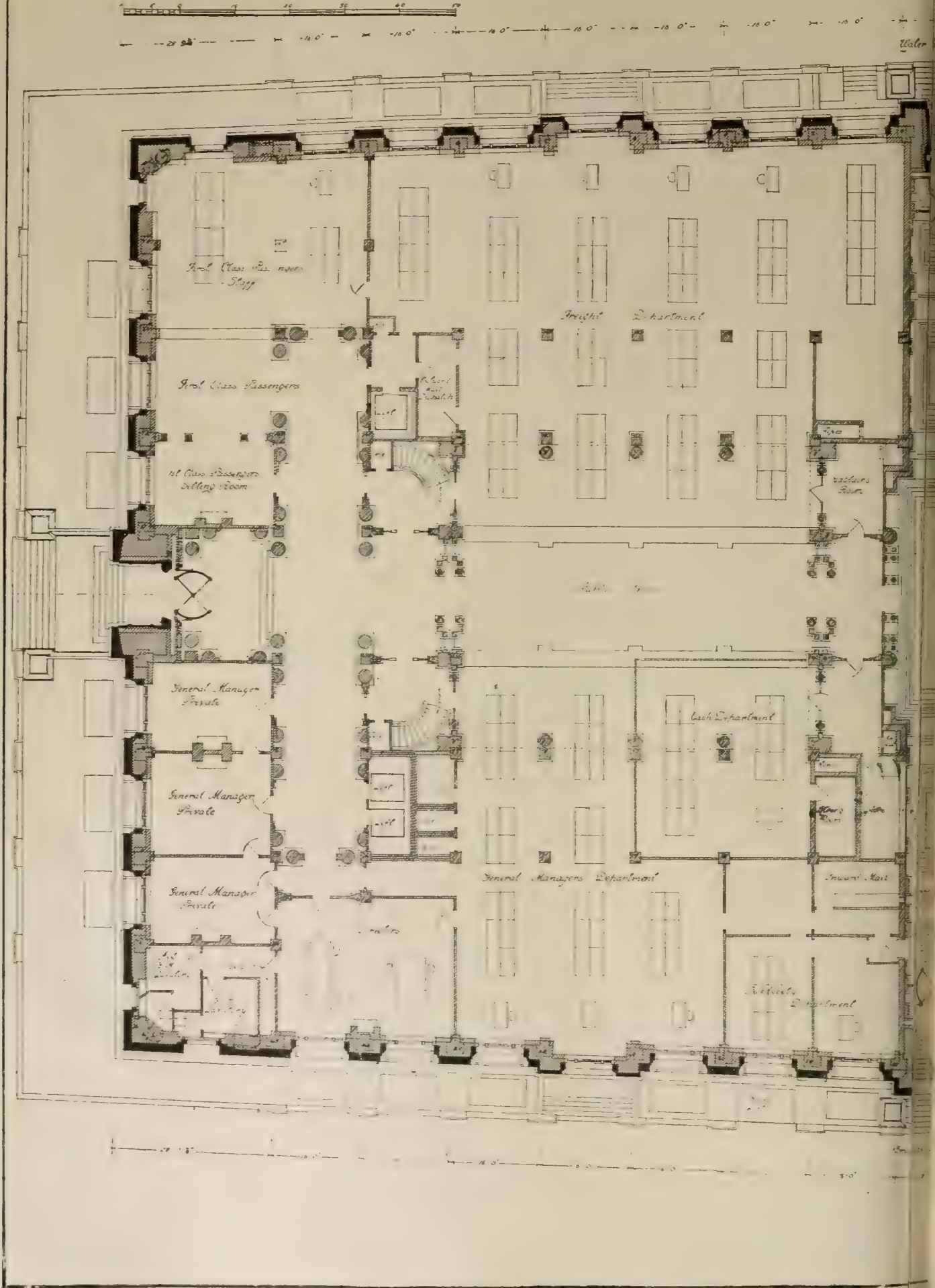
JANUARY 29, 1915.





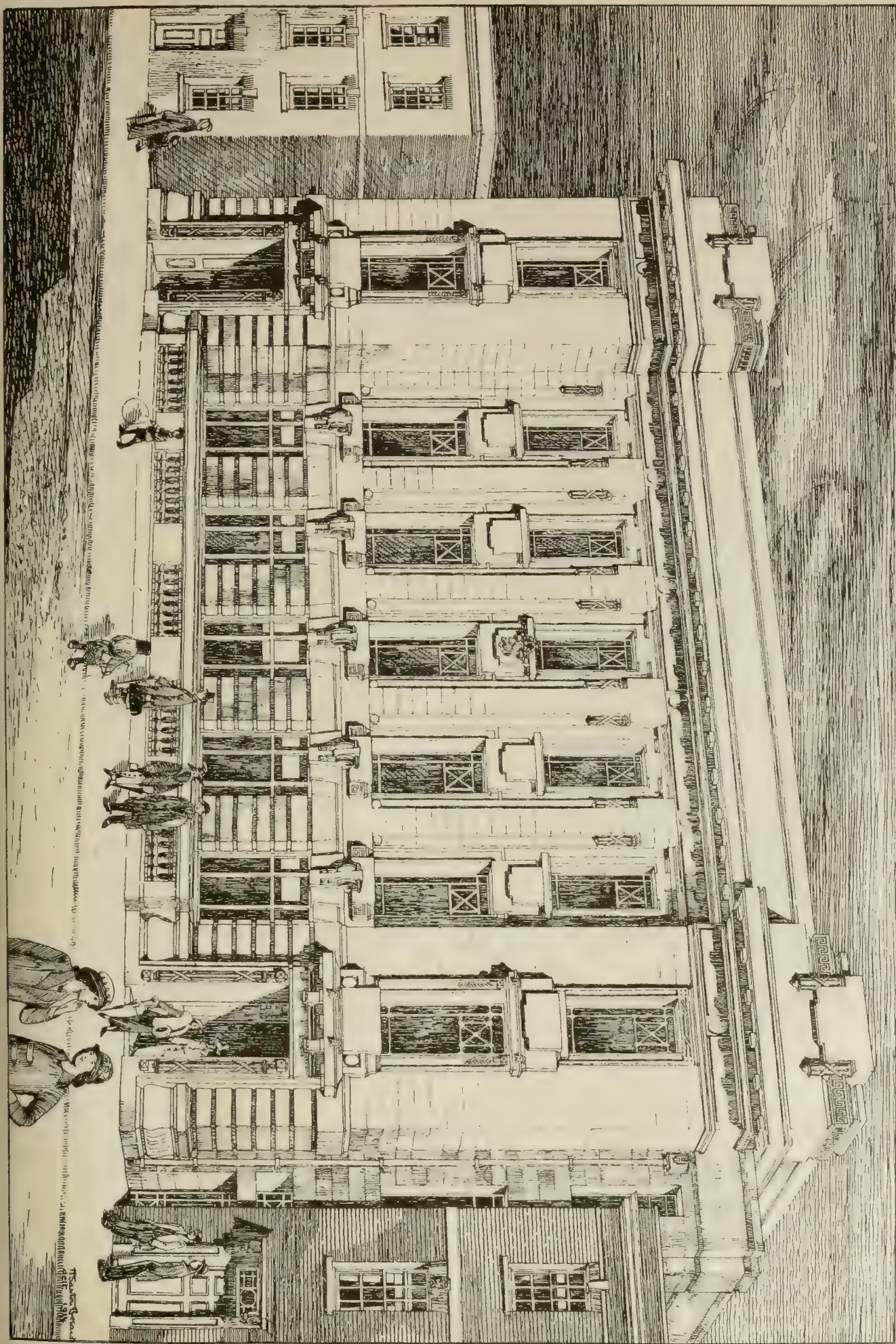


The Cunard Building Liverpool
The Ground Floor Plan



GROUND PLAN OF THE CUNARD BUILDING, LIVRPO
(Messrs. MEWES and DAWSON)





NEW POST OFFICE, NORTHAMPTON.—MR. A. R. MYERS, A.R.B.A., Architect. H.M. Office of Works.

PROFESSIONAL AND TRADE SOCIETIES.

THE ART OF BELGIUM.—M. Jean G. Rosier, Director of the Art Academy and Gallery at Malines, speaking at Islington Central Library on Saturday night on "Belgium and Her Art Treasures," said that the memory of the English generosity would remain in the heart of the Belgian nation for ever as a monument to the great English race. The Belgians knew that the English word was as firm as a rock, and that England had always brought her undertakings to a successful conclusion. The whole world would look to her as the champion of freedom, liberty, and justice. Referring to the beauty of Belgian paintings, sculpture, and architecture, he said it was this gift of art which, notwithstanding the sadness of the present hour, allowed them to consider the future with confidence. Art in his beloved country might suffer cruel wounds from an unscrupulous enemy, but as soon as Belgium's independence was re-established and peace restored the Belgian people would immediately and courageously set to work to recover the position they held among civilised nations in the world of beauty and art, of sculpture and of architecture.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.—A lecture on "Reinforced Concrete" was delivered on Friday night by Mr. S. Bylander to the Birmingham Architectural Association, at the gallery of the Society of Artists. Mr. G. Salway Nicol presided. The lecturer said there was not much difference in its cost and that of structural steel-work, but it had some peculiar advantages owing to its continuity in construction. There was no definite rule to be laid down as to whether steel-work or concrete was the better or more economical material; each might be used to the greater advantage after an examination of conditions for each particular building or structure.

THE BUILDING OF ENGLISH CATHEDRALS.—In his first lecture on English Gothic Architecture at the Victoria and Albert Museum, Mr. Banister Fletcher outlined the building of great churches between the Conquest and the Reformation. At that period Norman prelates founded sees and built great cathedrals like those in Normandy: the clergy increased in national influence because of their learning, and, further, the Conqueror favoured ecclesiastics and church-building. The plans of cathedrals were also elaborated by reason of ritual exigencies, which were the result of the worship of holy relics; of periodical pilgrimages to shrines as at Canterbury and Lincoln; of the veneration of the Virgin Mary which required Lady-chapels, and also of the masses for the dead which resulted in the formation of chantry chapels by noble families. Thus the 13th, 14th, and 15th centuries were marked, in spite of unsettled conditions, by religious enthusiasm which blazed out in the zeal of Crusaders, or which stirred more patient people to tramp to the shrines of saints in the homeland, as was so graphically described in the "Canterbury Tales." The various phases and processes in the life of the people promoted the growth of cathedrals, abbey churches, and parish churches during that long period which is now known as Gothic: a nickname expressive of the contempt in which it was held by subsequent purists in style.

THE CHURCH OF HOLYROOD ABBEY.—A lecture was delivered on Thursday night in Edinburgh College of Art, by Mr. John Watson, F.R.I.B.A., on "The History of the Building of a Great Medieval Church." Mr. F. Morley Fletcher (Director) presided. Mr. Watson said that he could not more happily exemplify the story of the building of a great Medieval church than by choosing one familiar to his audience, viz., the Church of Holyrood Abbey, which, though smaller in scale than many of its sister churches in England, was typical of a church of the first rank. The history of the building of the Abbey began in 1128. The early church appeared to have been a single-chamber church, to which a square or semi-circular sanctuary was subsequently added.

In building the Abbey, the conventual buildings were first erected, and the presbytery of the church apparently was proceeded with simultaneously. All that remained in situ of this church, which was not completed, is the east door from the nave to the cloister incorporated in the present building. In the first quarter of the 13th century, a reconstruction projected some years earlier by John, 5th abbot, was proceeded with, and the ruins of this reconstruction and enlargement were the abbey church we know. On plan it comprised a nave of eight bays, north and south transepts with eastern chapels in the aisles, a presbytery of four bays with lateral aisles, with a processional path between the high altar and the eastern termination of the building—the Lady-chapel; the aisles on the south side were double. This building took from the last quarter of the 12th century until the late 14th or early 15th century to complete. Its internal length from east to west is 267ft., length across transepts from north to south 134ft., and width across presbytery and aisles 60ft. The paper was illustrated by plans reconstructed from the excavations showing the churches in various stages of their development.

NORTH STAFFORDSHIRE BUILDING TRADES FEDERATION.—The annual conference was held at Hanley on Tuesday week, Mr. J. Sandham presiding. The secretary (Mr. F. Faulkner) reported that the federation had been successful in linking up the building trades operatives in and around collieries. Their position was financially sound. Upon a report being received on behalf of the Painters' Society to the effect that the painting trade was practically at a standstill, the secretary was instructed to write to the local governing bodies respectfully asking them to give out all the painting work they possibly could. The officers for the ensuing year were elected as follows:—President, Mr. Herbert Salt; vice-president, Mr. W. Key; secretary, Mr. F. Faulkner; treasurer, Mr. F. Clarkson; auditors, to be nominated by the Cabinet-makers and the Electrical Trades Union; executive council, Messrs. A. Skelthorne, J. Sandham, F. T. Toft, J. Baker, W. Simm, M. Griffiths, and J. Pickerill. The executive council reported that they had communicated with the Master Builders' Association in reference to the six-miles radius from Hanley Town Hall—the radius adopted by the federation as the district for the Potteries rate of wages—asking them to agree to it. The secretary said no reply had been received to his letter of six weeks ago. It was decided to send formal notice to the Master Builders' Association that the six-miles radius would come into operation on May 1. The conference confirmed a recommendation of the executive council that all affiliated branches of the federation should abstain from working overtime during the period of war.

PROFESSOR BALDWIN BROWN ON RHEIMS CATHEDRAL.—Professor Baldwin Brown gave a lantern lecture to the members of the Edinburgh Art Guild in the Goud Hall on Friday night, his subject being Rheims Cathedral. The Cathedral of Rheims, said Professor Baldwin Brown, was on the whole the most perfect monument of Gothic architecture, and as such it might fairly be termed the greatest, most varied, most inspired work of human art. From the interior view the building seemed to consist in a canopy of stone upborne at a great height by a series of slender supports of the lightest possible kind, the intermediate spaces being no longer walls but a mere screen of coloured glass. When we looked on the outside, however, we saw that there was the same amount of walling as in the earlier styles; but panels, as it were, had been taken out of the walls, turned round at right angles to their original positions, and used as piers for the lateral support required by the vaults. The whole system of Gothic vaulting, with its supports in the form of flying buttresses, was highly scientific, and the materials were very economically disposed. After the illustration of Gothic construction as displayed at Rheims, the rest of the lecture was devoted to the decorative

sculpture on the cathedral, of which numerous slides were shown, some of them exhibiting the results of the recent bombardments.

R.I.B.A. PROBLEMS IN DESIGN.—The designs submitted under Subject XVIII. will be on view in the Gallery of the R.I.B.A. next Monday, Tuesday, and Wednesday, Feb. 1, 2, and 3, inclusive, between the hours of 10 a.m. and 8 p.m.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—The Royal Institute of British Architects has from the first opened its doors to the numerous Belgian architects who have sought asylum in this country. On Monday, January 25, a number of these gentlemen and their ladies were the guests of the Institute at a reception given in their honour at the R.I.B.A. in Conduit-street, Regent-street. The president, Mr. Ernest Newton, A.R.A., accompanied by Mrs. Newton, received the guests and warmly welcomed them on behalf of the Institute. The architects present included men eminent in their profession, some holding high official positions in Brussels, Antwerp, Liège, and other of the chief Belgian centres. The opportunity of meeting their colleagues under the hospitable roof of their British professional brethren was evidently much enjoyed and appreciated. On the walls of the reception rooms were displayed some of the treasures of the Institute Collection, consisting of original drawings of 17th-century Italian, French, and English masters, and the original water-colour drawings by James Stuart, depicting views in Greece, afterwards reproduced in Stuart and Revett's famous work, "The Antiquities of Athens." Among the Belgian guests present were: M. Adrian Blomme, M. et Mme. R. Vanverborgh, M. et Mme. Alfred Portielje, M. Henri Carbon, M. Henri Blomme, M. et Mme. Brenta, M. et Mme. Geefs, M. et Mme. de Donckers, Brussels; M. Georges Vellut, M. et Mme. J. Caluwaerts; M. G. Van Canen, M. F. Matthysseus, M. et Mme. Dhaeyer, M. et Mme. J. R. Vanhoenacker, M. et Mme. Auguste Verraert, M. Paul Lambotte, Director of the Fine Arts of Belgium, and Mme. Lambotte, M. L. Delbove, M. A. Defever, M. J. Bytebier, M. et Mme. Louise Hendrikx, of Antwerp and Brussels; M. A. Dujardin, M. Georges Dieltiens, M. F. Homelsoet.

ST. PAUL'S ECCLESIOLOGICAL SOCIETY.—The thirty-sixth annual report to be submitted by the council at the annual meeting of this society, to be held to-morrow (Saturday) states that in spite of the war cloud the work of the society during the past has been well maintained. The attendance of members both at meetings and at the visits has been good. During the year the society has lost twelve members by resignation or death. Fourteen new members have been elected, eight of whom are ladies. The total membership is now 249. The council has to record the death of six members since the last annual meeting, including the Rev. H. D. Macnamara, M.A., F.S.A., chairman of the council; Mr. Frederick Gill, hon. treasurer of the society from 1892 to 1906; and Mr. S. Wayland Kershaw, M.A., F.S.A., an active member of the council in the early days of the society, and for many years a vice-president. Meetings have been held at the Chapter House, when papers were read by Mr. Charles H. Hopwood, Mr. H. W. Fincham, Rev. Walter Marshall, M.A., Mr. F. Herbert Mansford, the Rev. J. K. Floyer, the Rev. H. Bedford Pim, Mr. G. J. B. Fox, Mr. E. W. Harvey Piper, Mr. Walter E. Gawthorp, Mr. W. H. Aymer Vallance, and Mr. Mervyn E. Macartney. Visits have been made to the following churches and buildings on Saturday afternoons during the summer: St. Magnus-the-Martyr, London Bridge, St. Mary-at-Hill; Lambeth Palace; the parish church, old school room, Vaughan Library, school chapel, Butler Museum, and Speech Room, at Harrow; the churches at Coulsdon, Chaldon, All Saints, Tooting Graveney, Streatham, Bushey, Watford, Eynsford, Lullingstone, and Shoreham, and the Tower of London. A very interesting whole-day visit was paid to Oxford on Saturday, July 25, when a party of members and friends visited

Merton, Magdalen, and New Colleges, the Divinity School, Wadham and St. John's Colleges, Christ Church College and Cathedral, etc.

COMPETITIONS.

CIVIC CENTRE FOR VANCOUVER, B.C.—A Planning and Beautifying Commission was recently formed for the city of Vancouver. It was decided, therefore, to include the old court-house site, the central school site, the old hospital site and recreation grounds, as well as part or the whole of the remainder of the private property extending from Pender to Robson streets and from Beatty to Homer streets, provision to be made in the plans for a city hall, a public library, a technical college, a museum and art gallery, and a public hall or auditorium, as well as ample ground space for other semi-public buildings which may be erected later on, the whole area to include eight or nine blocks. In July last the civic centre committee asked the city council for a grant of 1,500 dollars to enable it to offer prizes for suitable designs. The request was refused; whereupon Mr. Wm. Farrell, managing director of the B. C. Telephone Company, came to the rescue by donating the entire amount. It was decided to offer half the sum in prizes and retain the balance as a fund from which to defray other incidental expenses. Thirty-seven competitors sent in plans. On the recommendation of the Hon. Clifford Sifton, chairman of the Canadian Commission of Conservation, Mr. Thomas Adams, town-planning adviser to the commission, till recently adviser to the Local Government Board, London, was appointed. Mr. Adams visited Vancouver recently, and after carefully considering the merits of each plan, on December 18 awarded the 500-dollar premium for the best design to Messrs. Theodore Kerner and Robert Mattocks, draughtsmen for T. H. Mawson and Sons, Vancouver; the second premium of 250 dollars going to Mr. Fred L. Townley, of the city draughting department.

DONCASTER.—About 300 architects appear to be engaged in preparing designs for the Doncaster housing competition, the plans for which are due in the middle of February. Mr. L. Patrick Abercrombie, of the School of Architecture, Liverpool University, has been appointed the assessor.

MANCHESTER.—At the annual meeting of the East Lancashire Masonic Benevolent Institution on Tuesday at the Masonic Hall, Manchester, Mr. J. B. Goulburn, Deputy Provincial Grand Master, presiding, a statement was made as to the progress of the scheme for building a new Masonic hall, for which the site has been secured on land in Bridge-street, formerly occupied by the Queen's Theatre. Twenty-nine architects had sent in provisional plans, from which eight were selected. A sub-committee of members of the Order who were architects had assisted the assessor, Mr. Walter Higginbottom, F.R.I.B.A., and three plans had been chosen as the best, and from these a final selection would be made. The scheme had been delayed by the war; but in good time an announcement would be made as to when the buildings would be proceeded with.

NEWCASTLE-ON-TYNE.—Messrs. Chas. T. Marshall and William Tweedy, Licentiate R.I.B.A., have been selected for the new buildings, including an assembly hall for 1,000 students, intended to be erected for the Rutherford College for Girls at Newcastle-on-Tyne. A limited competition was held, and six local architects were chosen by the governors on account of their special experience in educational buildings, with the result thus announced.

OLDHAM.—An infants' school and domestic centre is to be erected in Ward-street, and in the competition just decided Mr. J. H. Woodhouse, F.R.I.B.A., acted as the assessor. The award thus made places Mr. F. Thorpe, Licentiate R.I.B.A., first, Mr. T. Hilton second, and Messrs. Thomas Taylor and Ernest Simister, Licentiate R.I.B.A., third. The premiums were £15,

£10, and £5, and only local architects could submit plans.

PERTH.—In compliance with the request of the architects engaged in the Royal Academy competition, instituted by the School Board of Perth, the date for the reception of plans has been postponed till next March.

ST. HELENS.—The competition at St. Helens for new police buildings and fire-station is still undetermined, as no award has been made in connection with this project.

Correspondence.

UNHEALTHY SCHOOLS.

To the Editor of the BUILDING NEWS.

SIR,—I am glad to see from Mr. D. Wynne Thomas's letter that he is on the side of the angels, when he says, "I have not disputed the fact of down-draught being a 'crying evil,'" and I agree with his statement that it is "very undesirable that the temperature at head-level should be higher than at foot-level." If an equal temperature all over the body could only be secured we would be within measurable distance of the ideal plan; but such is not attainable with cross-ventilation, as the currents of cold, damp, and heavy air entering through the open windows must, by the law of gravity, perforce descend on to the children occupying the lower strata of superheated air. If this down-current did not exist there could not, with the cross system, be any change of air at breathing level, and as this descending current is what is generally known as a "down-draught," with cross-ventilation it is, therefore, unavoidable.

The fundamental defects of this plan may be stated as follows: (a) No provision is made for the extraction of the heated expired air at the higher levels, to where, under normal conditions, it naturally ascends, and from where it should, therefore, be withdrawn. (b) A continuous downward current of cold air from open windows, or, in other words, a "down-draught." (c) Cooling and returning to be rebreathed, the ascending, heated, expired air. (d) Condensation and precipitation on to the children of the moisture with which expired air is heavily charged. (e) Condensation and precipitation on to the children of the moist and poisonous exhalations from the body. (f) The creation of acute differences in the temperature of the body occupying a superheated stratum of air and drenched from above with cold air.

You, say, in the article under discussion, the objection to this system is that it consists "solely of draught, all draught, and nothing but draught." I would go further, and say that it consists solely of down-draught, and nothing but down-draught, of cold air.

The contention that with cross-ventilation the cold entering air displaces the heated air substantiates these objections, so that with this system there is nothing left that can be in any way beneficial, or that may be taken as a set-off against its disadvantages.

I see another correspondent says that schools ventilated on these lines are a valuable asset to medical practitioners; but as Mr. Thomas states that certain medical men approve of this plan, I trust the reference thereto may not in any way be taken as personal.—I am, etc.,

ANTI-DRAUGHT.

ENCOURAGING.

SIR,—You will be interested to learn that, resulting from your kind notice in your journal of our new skeleton-proof hotel lock, we had an inquiry—practically by return mail—from Granada. With many thanks.—I am, etc.,

A. AMBLER
(Manager for Joseph Kaye and Sons, Ltd.)
93, High Holborn, W.C., Jan. 26.

[Glad to hear it. War has not withered all the fruits of judicious enterprise evidently, as some seem to fear.—Ed. "B.N."]

LEGAL INTELLIGENCE.

ULVERSTON ARCHITECTS' CLAIM.—Samuel Grundy, sen., and Samuel Grundy, jun., architects and surveyors, of Ulverston, sought at the Liverpool Assizes on Tuesday to recover from John Bayliff, of Ulverston, £180 13s. 4d. in respect of services rendered. Plaintiffs' claim arose out of a scheme for the conversion of an old mill at Ulverston into a cinema palace. Defendant consulted plaintiffs, who surveyed the premises, prepared plans, and performed other services in connection with the proposed construction of a cinema theatre on the upper floor of the mill. For the carrying out of the scheme the cost was estimated at £1,891. Subsequently, after these plans had been approved by the local council and the justices, defendant decided to alter his scheme so that the theatre should be placed on the ground floor instead of on the upper floor. Plaintiffs, on defendant's instructions, got out new plans accordingly, and these were approved by the justices on May 7. The lowest tender received for carrying out the altered scheme was £2,240. Defendant then said the cost was more than he had contemplated, and dropped the matter altogether. He told plaintiffs to send in their account and keep it as low as they could. For the defendant it was contended that he understood that the plans were prepared in the belief on his part that the cost would not exceed £1,000. In view of the fact that the conversion scheme was not proceeded with, the charges were too high. Defendant had not refused to pay what he considered a reasonable sum. The jury found for the plaintiffs for £140.

DRY WALLS ON FARMS, AND INCREMENT DUTY.—In the King's Bench Division Mr. Justice Rowlatt has given judgment in the action Walter Morrison v. Inland Revenue Commissioners, which raised the point whether for estimating increment duty on the site value of a farm, walls built without mortar, and used for boundaries and the protection of sheep ought to be divested under Section 25, Sub-section 2, of the Finance Act, 1910. Mr. H. F. Dickens, K.C., for the appellant, claimed that such walls, being permanent structures, were "buildings" within the meaning of the Finance Act; for the Crown, the Solicitor-General argued that the term "building" only applied to something to which a structure might be appurtenant. In his judgment Mr. Justice Rowlatt said the word "buildings," as used in subsection 2, had in itself no limitation, and there was nothing therein to show what it meant, with the exception of this: After "buildings" came the words "or any other structures . . . which are appurtenant to or used in connection with any such buildings." That showed that the building must be of such a character that a structure could be appurtenant to it or used in connection with it. It was quite clear that "buildings" did not mean anything of which it could be said that they had been built, but meant buildings of a more narrow class than structures. The only way to interpret the word was by looking at the nature of the property which was being dealt with, and it was impossible to say that the character of the workmanship put into the structure was the test. One ought to look at the character of the structures, the nature of the property on which they stood, and their function on that property. Here they were dealing with a farm, and in interpreting the meaning of "buildings" one must consider that what was meant was what one would ordinarily call farm buildings. Therefore he did not think that these walls were buildings. In his opinion the action failed. He granted leave to appeal.

CONTRACTOR WINS CLAIM AS EXPERT.—At the Leek County Court, on the 18th inst., before his Honour, Judge Ruegg, K.C., Frederick Barke, contractor, of Stoke-on-Trent, sued the Endon and Stanley Parish Council for £6 6s., being his fee for advice to the council in connection with the sewerage scheme for the district. Mr. Ashwell, of Stoke, appeared for the plaintiff, and Mr. J. Morris Shaw, clerk to the Leek Rural District Council, for the defendants. Mr. Ashwell said the claim was for advice given to the council in getting out the probable cost of the scheme in November, 1907. The scheme was submitted to the Leek Rural District Council, and they decided that a cheaper scheme would answer the purpose. In 1908 his client sent in his bill to the parish council, but got no reply. He then wrote to Mr. Ford, chairman of the council, and he subsequently got a letter from the late Mr. King, who was then clerk, saying that his letter would be laid before the district council for them to pay, and asking that it be allowed to stand over a while. Finally, Mr. Barke's scheme was dropped and another adopted. Then the clerk to the parish council repudiated the claim, and there was no minute in the books showing that they had authorised the late clerk to say it would be paid. The plaintiff gave evidence bearing out this state-

ment. Mr. Shaw argued that the plaintiff sent in a tender while working with the surveyor; but his Honour held that that was not the plaintiff's scheme. Mr. Shaw then pleaded the Statute of Limitations. He argued that the parish council did not promise to pay, but hoped to make the rural district council pay. The parish council had no power to employ a surveyor, and the schemes had to receive the sanction of the Local Government Board. His Honour, in giving judgment, held that the parish council had a perfect right to call in advice as to the best scheme, and a sewerage scheme was certainly a most important one. The council would probably be composed of men who did not know very much about sewerage matters, and so they called in expert advice, for which they would have to pay, and his opinion was that the auditor would not surcharge such a payment on the members. The clerk to the parish council had written admitting the deal by saying it was not forgotten, and also expressing the hope that the rural district council would see fit to pay. He gave judgment for the plaintiff for the full amount, with costs.

CHIPS.

An addition to the University of Ottawa has been completed at a cost of 150,000dol., exclusive of fittings. The new building is four stories high, 130ft. by 52ft. in dimensions, of Indiana limestone. The architects were Messrs. Meredith, Findlay, and Hazelgrove, of Ottawa.

Mr. F. H. Tulloch held an inquiry at the Town Hall, Manchester, on Tuesday, into the City Council's application to the Local Government Board for sanction to borrow £14,579 for works of private street improvement. The street improvements in question are to be made on the southern side of the city.

Exterior work on the new Loyola College, which is being erected at Notre Dame de Grace, Montreal, at a cost of 400,000dol., is progressing satisfactorily. The building is of stone, of fireproof construction. The architects are Messrs. Peden and McLaren, and the contractors are Messrs. Anglins, Ltd.

The county surveyor of Staffordshire, Mr. Morcur, has been authorised by his council to carry out the work of diverting and widening the Great Bridgeford and Woodseaves main road near Gamesley Brook, at an estimated cost of £780, the Road Board having agreed to make a grant of two-thirds of the cost.

It is expected that before long tenders will be called for interior fittings and furnishings for the new buildings now being erected at South Edmonton for the University of Alberta at a cost of 450,000dol. The architect is Mr. A. Burgess, of Edmonton, and the contractors are Messrs. Geo. A. Fuller Company, Ltd.

At the last meeting the urban district council of Selby approved a plan submitted by their surveyor, Mr. Bruce Gray, for a new road to be made from Gowthorpe-street to Flaxley-road, giving direct communication between two populous parts of the town. The thoroughfare is to be 40ft. wide.

The death occurred at Bournemouth on Wednesday in last week, at an advanced age, of Mr. Charles Starkey, J.P., retired builder, of Tamworth, who was mayor of the latter borough in 1884 and 1885. He was first elected to the council in 1882, and as a councillor served about eleven years. Since November, 1895, he had been alderman. For several years he was a member of the board of guardians, and from 1866 to 1873 was people's churchwarden.

A joint meeting of the docks committee and new streets committee has been held at the Council House, Bristol, to consider the suggested schemes for the provision of a new road between North Bristol and Temple-street, and the construction of a bridge across the floating harbour between Bell-avenue and Freshford-lane, as a means of relieving the congestion of traffic at Bristol Bridge, which had been referred to the two committees by the council. A sub-committee was appointed to consider and report upon the various proposals suggested.

The American Concrete Institute has appointed a special committee to investigate the behaviour of the concrete buildings in the Edison plant. The committee consists of Mr. Cass Gilbert, architect, New York, chairman; Mr. E. J. Moore, of the Turner Construction Company, New York, secretary; Mr. Walter Cook, architect; Mr. J. Max Taylor, architect; Mr. R. P. Miller, of the New York Building Department; Mr. W. H. Ham, engineer, of Boston, Mass.; Prof. Charles L. Norton, of the Massachusetts Institute of Technology; Mr. Richard L. Humphrey, consulting engineer, of Philadelphia, Penn.

Our Office Table.

"Lockwood's Builders', Architects', Contractors', and Engineers' Price-Book for 1915" (London: Crosby Lockwood and Son, 4s.), more than ever necessary this year, is as fully up to date as present disturbing circumstances will permit, and in all respects as reliable as ever. In his preface—the last he will ever write, as we regretfully state elsewhere—its editor for so many years comments on the insufficiency of the recognised form of contract, as issued by the R.I.B.A., to cover the present crisis, without additional clauses. He appends a series of clauses which have been amicably drawn up and adopted to meet present urgencies, as the result of joint action by clients, architects, and contractors, on a large job, which is now being carried out satisfactorily thereunder.

At the last meeting of the City Corporation, the vacancy in the office of City Engineer, caused by the death of Mr. Frank Summer, was reported. Mr. Kimber moved that the Officers and Clerks Committee, after conferring with all the committees specially concerned, should report whether it would not be in the interest of the Corporation to eliminate all valuation work from the duties at present attached to the offices of "engineer" and "surveyor," and to make new arrangements in regard to such work. He further moved that the Court should consider and dispose of that report before any steps were taken to fill up the existing vacancy in the office of engineer. Mr. Deputy Morton, M.P., had given notice of his intention to move that the Officers and Clerks Committee should consider the duties and emoluments of the office of engineer, conferring with the committees of the Public Health Department. Mr. Brinsley-Harper suggested that both the motions should be referred forthwith to the Officers and Clerks Committee.—Mr. Kimber said he did not object to that suggestion.—Mr. Deputy Morton urged that Mr. Kimber's motion meant setting up another department at immense expense.—Mr. Domoney described both motions as premature, and moved that the whole matter should first be considered jointly by the three committees of the Public Health Department. This amendment was seconded by Mr. Jerrold-Nathan. After further discussion, Mr. Kimber expressed agreement with the amendment, and the Court adopted it. In these circumstances Mr. Deputy Morton did not proceed with his motion.

When it is desired to flatten out old mounted plans, old paper drawings, or old cloth or paper prints, the following method has been found to work successfully in every instance where harsh handling or reverse rolling would ruin the appearance of a drawing: Make a thick, boiled starch of flour by boiling flour and water down to almost the consistency of thin dough. Lay the plan out bottom up on a flat surface and apply the starch as a paint, thoroughly rubbing it into the surface. Keep the plan perfectly flat until dry, and then it will be found that it will remain smooth. The flour starch will not injure the plan in any manner. This method was found to be the only successful way of treating a large number of old railroad plans which had to be flattened out for filing in drawers.

A two-days' conference of local authorities of the Western Midlands to consider housing and town-planning administration, with especial reference to the administration of the new Housing Act during the period of war, was opened at Birmingham on Tuesday. Councillor Harold Shawcross (Rochdale), chairman of the National Housing and Town-Planning Council, who presided, said they felt that at a time like this the Government might stretch a point and put their ancient shibboleths about economic rent and subsidy and things of that kind on one side, and arrange to let local authorities have money at the old rate of interest before the war. They recognised that the Govern-

ment, acting through the Local Government Board, wished to stimulate the building of houses by local authorities and by public utility societies during the war period. They believed this policy to be a wise one, for two special reasons: firstly, that the supply of private capital for financing building operations would be greatly restricted during the period, and there might be a lack of employment in the building trade, with consequent distress; and, secondly, that it would be better to keep the building trade supplied with useful work than to allow conditions of bad trade to arise, with all the consequent waste of money on costly and more or less ineffective relief works. While recognising the difficulty which the Treasury might have in financing housing schemes at the present time, they were convinced that any proposal which involved the payment of interest by local authorities at a rate higher than was current before the war would meet with but little response from them. The procedure for granting housing loans should be the one familiar to local authorities—viz., for periods of sixty years for building and eighty years for land. It was most important that the Government should stimulate local authorities in undertaking housing schemes by making capital grants in aid of the expenditure upon such schemes. Wherever possible houses in urban districts should be built under town-planning conditions, with a limitation of houses to the acre of from twelve to sixteen. In rural areas provision should be made for each house to have a site area of a quarter of an acre, or that, if it were decided to build on less than this area, in no case should there be more than eight houses to the acre. Local authorities should also be required to adopt a good standard of housing—for example, the sizes of rooms should not be less than those recommended by the Small Holdings Committee, and three rooms in addition to the living-room should be provided.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Town Planning Institute. "The Urban Land Problem," by Prof. S. D. Adshad. 8 p.m.
Glasgow Architectural Craftsmen's Society. "Lighting," by James Telfer. 7.45 p.m.

SATURDAY (To-morrow).—St. Paul's Ecclesiological Society. 36th Annual Meeting. St. Paul's Chapter-House, E.C. 2.30 p.m.
Provident Institution of Builders' Foremen and Clerks of Works. Annual Dinner at King's Hall, Holborn Restaurant. 5.30 for 6 p.m.
Association of Engineers-in-Charge. Discussion on "English v. German Superiority of Business Methods." St. Bride's Institute, Bride-lane, E.C. 7.30 p.m.

MONDAY.—Royal Academy. "Sculpture in Pre-Historic Times," by Sir Charles Waldstein. 4 p.m.

Victoria and Albert Museum. "English Gothic Spires and Roofs," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.

Royal Institute of British Architects. Nomination for Royal Gold Medal. Consideration of the Revised Schedule of Professional Charges. 8 p.m.
Royal Society of Arts. "Oils—their Production and Manufacture," Cantor Lecture No. 3, by Dr. F. Mollwo Perkins. 8 p.m.

WEDNESDAY.—Royal Academy. "Archaic Greek Sculpture," by Sir Charles Waldstein. 4 p.m.
Royal Archaeological Institute. "Reims Cathedral," by Aymer Vallance, M.A., F.S.A. 4.30 p.m.
Royal Society of Arts. "Imperial Industrial Development after the War," by Octavius C. Beale. 8 p.m.

THURSDAY.—British Museum. "The Colosseum, Rome," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.

We regret to learn by cable that Mr. George Patrick Robertson, municipal engineer, Darjeeling, has been accidentally drowned this week while surveying near Darjeeling.

At Montreal, excavating is under way for a public library on Sherbrooke and Montcalm streets. The estimated cost is 200,000dol. The architect is Mr. E. Payette, of Montreal.

At the last meeting of the council of the Royal Society of Painter-Etchers and Engravers Mr. F. H. Townsend, Mr. Neils M. Lund, and Mr. S. Tushingham were elected Associates.

(All prices net.)

IRON.

The corporation of Stoke-on-Trent will consider a recommendation of the sewage committee that land be purchased at Strongford, south of Trentham, for the purpose of sewage-disposal, and that works be erected there to deal with the sewage from the district of Stoke (the area of the old borough of Stoke).

TRADE NOTES.

Under the direction of Mr. E. J. A. Christie, county architect, Boston, Lincs, Boyle's latest patent "air-pump" ventilators have been applied to Wrangle Central Schools.

In last week's list of Tenders on page 120, the name of the successful tender for staircase at Camden-street School should have been F. A. Norris and Co., St. Andrew's Hill, E.C., instead of as there printed.

We hear that his Majesty's Office of Works are users of "Pudlo," and among the latest works for its inclusion is the Dundee new Post Office: the cement mortar and all renderings are to be waterproofed with "Pudlo."

FOR

Olivers'

Seasoned

Hardwoods,

TO—

WM. OLIVER & SONS, Ltd.,

120, Bunhill Row, London, E.C.

TENDERS.

. Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ABERTIDWR.—For the erection of two shops, for Mr. F. Hawkins. Messrs. Evans, Williams, and Evans, Pontypridd, architects:—
Jones, R., Caerphilly ... £1,550 0 0
Jones, E., and Sons, Pontypridd ... 1,533 0 0
Julian, A. W., Pontypridd ... 1,366 0 0
Hamilton & Millard, Caerphilly ... 1,326 0 0
Williams, T., Abertridwr ... 1,304 0 0
Davies and Lloyd, Senghenydd ... 1,210 0 0
Gough Bros., Cardiff ... 1,192 0 0
Williams, J., Abertridwr* ... 1,120 0 0
* Accepted.

AYR.—For erection of an enteric-fever block, for the corporation. Accepted tenders:—
Masons:—
Milligan, D. and J. ... £1,191 17 1
Joiners:—
Meikle, J. and D. ... 965 1 8
Plumbers and slaters:—
Jamie, R. and J. ... 643 13 10
Plasterer, &c.:—
Miller, W. ... 366 5 6
Painter:—
Tierney, F. K. ... 226 8 0
Electric lighting:—
Reid and Co. ... 145 2 6

BECKFORD.—For erection of six cottages at Beckford, for the Winchcomb Rural District Council. Messrs. Phillott and George, Promenade, Cheltenham, architects:—
Bilings, A. C., and Sons, Cheltenham ... £1,684 0 0
Matthews and Mullis, Stratford-on-Avon ... 1,399 0 0
Chivers, F., Stratford-on-Avon ... 1,360 0 0
Drew, W., Cheltenham ... 1,350 0 0
Williams, T. D., Evesham ... 1,280 0 0
Knox, J., Evesham (accepted) ... 1,189 0 0

BETHNAL GREEN, E.—For the supply of cable, for the borough council:—
Union Cable Co. ... £12,948 11 0
Glover, W. T., and Co. ... 12,942 15 0
Callendar's Cable and Construction Co. ... 12,887 0 0
Western Electric Co. ... 12,734 5 0
Siemens Bros. and Co. ... 12,651 0 0
Johnson and Phillips ... 12,618 9 0
Hendley's, W. T., Telegraph Works Co. ... 12,586 0 0
British Insulated and Helsby Cables, Ltd.* ... 12,498 11 0
* Recommended for acceptance.

CONWAY.—For waterworks, for the rural district council. Mr. T. L. Oliver, B.Sc., A.M.I.C.E., Stanley Buildings, Conway, engineer. Quantities by the engineer:—
Salt, S., Deganwy ... £4,650 0 0
Rowland, R., Colwyn Bay ... 3,252 0 0
Crisp, J. G., Stalybridge ... 3,641 0 0
Lumb, B., Old Colwyn ... 3,058 0 0
Evans, J., Glanwydden ... 3,111 0 0
Priehard, R. O., Conway ... 2,690 0 0
(Engineer's estimate, £2,865.)
* Accepted.

DARTFORD.—For additions to cooking plant, &c., at the Joyce Green Hospital, Dartford, for the Metropolitan Asylums Board:—
Bradford, T., and Co., High Holborn, W.C. ... £940 0 0
Fletcher, Russell, and Co., Ltd., Queen Victoria-street, E.C. ... 882 0 0
May, J. and F., Whetstone Park, Slater, J., and Co. (Engineers), Ltd., Well-street, W. ... 831 0 0
Moorwood's, Ltd., Queen Victoria street, E.C. ... 827 10 0
Benham and Sons, Ltd., Wigmore-street, W. ... 799 10 0
Summerscales, Ltd., Westminster* ... 725 0 0
(Engineer-in-chief's estimate, £915.)
* Recommended for acceptance.

DARTFORD, S.E.—For provision of hose-boxes with fire fittings at the Southern Hospital, Dartford, for the Metropolitan Asylums Board:—
Hayward-Tyler and Co., Ltd., Queen Victoria-street, E.C. ... £312 10 0
Hunt and Mitton, Ltd., Gray's Inn-road, W.C. ... 325 0 0
Blakeborough, J., and Sons, Brighouse ... 325 0 0
McGregor and Co., Dundee ... 294 0 0
Mills, G., & Co., Ltd., Radcliffe Shand, Macon, and Co., Upper Ground-street, S.E. ... 246 17 6
Bird, F., & Co., Oxford-street, W. ... 229 10 0
Merryweather and Sons, Ltd., Greenwich-road, S.E. ... 218 0 0
Taylor, J., and Sons, Ltd., York road, N. ... 208 17 0
Rose, W. Hose Co., Ltd., Aldgate High street, E.C. ... 196 5 0
Sinclair & Co., Eldon-street, E.C.* ... 179 0 0
(Engineer-in-chief's estimate, £220.)
* Recommended for acceptance.

DEPTFORD, S.E.—For supply of account books, for the Deptford Borough Council:—
Joanes and Son, New Cross-road ... £62 7 6
Gayland and Son, New Cross-road, S.E. ... 41 18 6
Mottram, E., and Son, Queen Victoria-street, E.C.* ... 37 18 6
* Recommended for acceptance.

HOMERTON, N.E.—For alterations to sanitary conveniences, &c., Eastern Station, Homerton, N.E., for the Metropolitan Asylums Board:—
Finch, B., and Co., Ltd., Belvedere-road, S.E. ... £248 15 0
Economic House Drainage Repairing Co., Ltd., Marylebone-road, N.W. ... 197 0 0
Cooke, E. A., Birmingham ... 184 5 0
Markham & Markham, Victoria-street, S.W. ... 175 0 0
Sharpin, W. S., Bow, E. ... 170 0 0
Darch, J., Whitefriars-st., E.C. ... 170 0 0
Line, H., Peckham Rye ... 169 0 0
Truscott, R. J., Forest Gate ... 158 17 5
Payne Bros., Leavesden, near Watford ... 157 10 0
Inns, A. H., Camomile-st., E.C.* ... 157 10 0
(Engineer-in-chief's estimate, £215.)
* Recommended for acceptance.

LONDON.—For the supply of cupboards, schedule No. 138, during one year, for the London County Council. Accepted tenders and estimated value of contracts:—
Items 1, 2, and 13:—
Lyle Trading and Manufacturing Co., Ltd., Harrison-street, W.C. ... £1,716 0 0
Items 5 (a) and (b), 11, and 13:—
Bradford, T., and Co., Salford ... 579 0 0
Item 8 (a) and (b):—
Clark, W., Canonbury-place, N. ... 334 0 0
Item 10:—
Hammer, G. M., and Co., Ltd., Bermondsey, S.E. ... (Not stated.)
Items 6 and 13:—
Hopkins, P. G., Oxford-street, W. ... 69 0 0
Items 3, 4 (a) and (b), 9, and 13:—
London School Furniture Co., Islington, N. ... 907 0 0
Items 7, 12 (all sections), and 13:—
Shapland and Potter, Ltd., Barnstaple ... 160 0 0

LONDON.—For the supply during one year of tables and forms, schedule No. 145, for the London County Council. Accepted tenders, and estimated value of contents:—
Items 2, 22, 29, and 30:—
Hammer, G. M., St. James's-road, Bermondsey ... £1,157 0 0
Items 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 25, and 26:—
Clark, W., Canonbury-place, N. ... 996 0 0
Items 1 and 23:—
London School Furniture Co., Tyndale-place, Upper-st. N. ... 400 0 0
Items 19, 20, and 27:—
Mathews, A. G., Redcliffe Hill, Bristol ... 759 0 0

ROMSEY.—For the erection of a council school in Romsey, for the Hampshire Education Committee:—
Jenkins and Son (accepted) ... £2,293 0 0
(Lowest of seven tenders received.)

STAMFORD HILL.—For the provision of heating apparatus at the Stamford Hill stores depot, for the London County Council:—
Bradley, G. and E., Lever-street ... £583 0 0
Cannon, W. G., and Sons, Ltd., Southwark, S.E. ... 498 0 0
Deane, E., & Beal, Ltd., London Bridge, E.C. ... 482 0 0
May, J. and F., Lincoln's Inn-fields, W.C. ... 419 0 0
Do. (alternative tender, not in accordance with specified requirements) ... 365 0 0
Freer, W., Theobald's-road* ... 414 0 0
(Architect's estimate, £500.)
* Accepted.

WANDSWORTH, S.W.—For re-erecting an iron building on the St. Ann's-hill site, Wandsworth, for the London Education Committee:—
Fletcher, F. W. (accepted) ... £982 0 0

WESTMINSTER, W.C.—For alterations to the mortuary keeper's residence, coroner's court, &c., for the city council:—
Cubitt and Co. ... £1,650 7 0
Holloway Bros. ... 1,629 0 0
Palman and Fotheringham ... 1,571 0 0
Coulthard, T. ... 1,541 0 0
Godson and Son ... 1,635 0 0
Garlick, Ltd. ... 1,522 0 0
Kirk and Kirk ... 1,435 19 0
Blake, Ltd. ... 1,410 4 1
Sims, J. R.* ... 1,347 0 0
* Recommended for acceptance.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the Editor of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

. Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits, on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

NOTICE.

Bound copies of Vol. CVII. are now ready, and should be ordered early (price 12s. each, by post 12s. 9d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XLI., XLVI., XLIX., LIII., LXI., LXII., LXIV., LXV., LXVI., LXVII., LXVIII., LXIX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., LXXVII., LXXIX., LXXX., LXXXI., LXXXII., LXXXIII., LXXXIV., LXXXV., LXXXVI., LXXXVII., LXXXVIII., LXXXIX., XC., XCI., XCII., XCIII., XCIV., XCV., XCVI., XCVII., XCVIII., XCIX., C., CI., CII., CIII., CIV., CV., CVI., and CVII. may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

Handsome Cloth Cases for binding the BUILDING NEWS, price 2s., post free 2s. 4d., can be obtained from any Newsagent, or from the Publisher, Effingham House, 1, Arundel-street, Strand, W.C.

RECEIVED.—S. W. F. and Co., Ltd.—T. T. G. and Co.—A. D. D. and Sons, Ltd.—F. W. E. E. Co. B. of L.—C. of M.—A. W. R. M. and Co., Ltd.—H. Bros., Ltd.—G. W. E. Co.—L. P. E. R., Ltd.—D. and Co., Ltd.—W. S. C. C. A., Ltd.—V., Ltd. A. H. and Son.

V. W.—Yes.

R. D. L.—Please send.

T. C. D.—They are the same.

M. T.—Many thanks; but see our issue of July 21, 1914.

"BUILDING NEWS" DESIGNING CLUB.

FIFTH LIST OF SUBJECTS.

E. A Co-operative Hostel for a Garden Suburb, consisting of eight separate lodgings for single gentlemen, planned as separate flats, with a common refectory 20ft. long by 14ft. wide, situate in the centre of the long frontage, and provided with a 6ft. wide verandah in front as a smoking lounge in the summer, and partly screened by glazed frames for spring-time and autumn. On each flank end of this refectory place four lodgings or flats, two on ground floor and two on first floor, the common entrance door to each set of four to be at their respective end of the building, which will run N. and S., the frontage facing W., with garden ground to the E. The extreme length of the block or building to be not more than 100ft., the depth, being comparatively small, is not exactly restricted, and the site is open and level. Each flat or lodging to have a sitting-room 14ft. by 12ft. 6in., or of that area, exclusive of bays, and a bedroom about 12ft. 6in. by 10ft. Also a small food store with small external window for ventilation, and a small box-room for boots, &c. One bathroom to serve for two flats, and one w.c. for the four tenants. One commodious staircase to each of the two sets of four dwellings, to give access to the pair on the first floor in each case. One garden door at back to each set of four flats. A 6ft. wide passage, leading to staircase and to common dining-room, is to divide the flats, two sets of which will face west and two sets east. This passage is not to run through the building from end to end. The kitchen is to be within the main lines of the building, and to face east at back of refectory, into which it is to lead, and to have a hatch also for service. Provide en suite a scullery, larder, dry store, coal place, back w.c. (all in small enclosed yard); also a private staircase to lead to housekeeper's rooms in centre of upper floor. These comprise a sitting-room, two bedrooms, bathroom, and w.c. Also a store or linen-room. Housekeeper will undertake cooking, servants, general administration, and service. Refectory or dining-room to be 10ft. 6in. high; other rooms 8ft. high from floor to ceiling. Ground floor 1ft. above level outside. Front elevation 6ft. to inch. One end elevation, and sufficient to show east elevation; also one section may be to 5ft. to inch. Plans may be to 16ft. to inch if space is limited on sheet. A view sketch from S.W. corner is desired. Compact and commodious planning essential, and simple architectural treatment suitable for brick and tiles. Drawings, all on one sheet of paper as per Rules, to be sent in to the BUILDING NEWS Office on or before Feb. 27 next, with coupons on the back.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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OUR ILLUSTRATIONS.

Church of the Holy Angels, Hoar Cross, near Burton-on-Trent. Tomb of the late Hugo Meynell-Ingram. Messrs. G. F. Bodley, R.A., and Thomas Garner, Architects.

The Florence Nightingale Statue (with plan showing rearrangement of the Crimean Monument), Waterloo-place, S.W. Mr. Arthur G. Walker, Sculptor.
 Eyford Court, Gloucestershire. Two views of the building as finished. Mr. E. Guy Dawber, F.R.I.B.A., Architect.
 The Glynn Vivian Art Gallery and London and Provincial Bank, Swansea, and Offices at Port Talbot. Views and plans. Mr. Glendinning Moxham, F.R.I.B.A., Architect.
 Pathhead Schools, Kirkcaldy, N.B. Plans and view: Selected Design. Mr. William Williamsou, F.R.I.B.A., Architect.
 New Tower, Llansamlet Church, S. Wales. Mr. Glendinning Moxham, F.R.I.B.A., Architect.

ARCHITECTURAL "INEFFICIENCY."

In another sense probably than indicated last week it seems we have more things to "learn from the enemy" than Professor Lethaby pointed out, and if the "enemy" this time is one of the family, only the fools amongst us, ignorant of the fact that no real Britisher is ever happy except when he is denouncing the shortcomings of his fellow-countrymen, will owe our critic a grudge. Indeed, like ourselves, the *Canadian Contract Record*, which descants under the above heading on the shortcomings of architects, has comparatively little to say about the sins and shortcomings of others, although here and there we gather it thinks the more; it is its own architects who are rounded up and rated with a robustness that may possibly elicit purrs of self-complacent satisfaction from some of the righteous here who may read and bless their stars that they are not as these Canadians!

Premature satisfaction of that sort, we fancy, will be short-lived. For the general tenor of the indictment is a familiar one. Here is the opening exordium:—

There is common agreement that the essential attribute of an architect is "skill in the art of building." Taking such skill as something more than a superficial knowledge of design, one is tempted to ask what is the proportion of the architectural profession in Canada possessing it. The question arises out of the unsatisfactory performances of the profession as revealed in the Courts. The evidence offered in these cases would appear to indicate that many architectural practitioners in Canada to-day are not only insufficiently versed in what constitutes sound building construction, but that they lack the mental and moral attributes which should impel them to quick decisions in condemning inferior materials and workmanship. They sidetrack the terms of the contract, and rely too much upon the contractor, who more often than not is the member of a select family party with whom, perforce, the architect must maintain good relations.

Leaving the "mental and moral attributes" of our Canadian brethren to their own censors, let us try and find out why they are inefficient:—

Architects would appear to number in their ranks many types of inefficients. One of these is the "artist" type individually, perhaps, a graduate of some European school of design, and a designer in the superficial and more elaborate sense. Such a man is often quite accomplished in things æsthetic; but in ninety-nine cases out of one hundred he is sadly lacking in things practical. There is all the difference between an "artist" and "one skilled in the art of building." In this connection it may be of interest to quote the following extract from a recent judgment: "To some extent an architect is an artist—that is, as regards the design and plan. But for the rest, his work is just ordinary tradesman's work—drawing specifications and supervising the work. He is

not supposed to do all the supervision personally. His subordinates can do much of it as well as he can himself; but if he undertakes to do it, he is bound either to do it himself or to have it done by some person whom he employs and in whom he has confidence. I think the meaning of the contract is that he shall see that the work is done well before he certifies it. If he does not do this, then the interest of the employer is altogether neglected."

"In this connection," which it is not easy to trace, one is left in ignorance of the lapses of the artist-architect concerned; and while heartily endorsing the last two sentences of the judgment quoted, can only remark that there is not a scrap of evidence adduced of his shortcomings. Type number two we give up at once to our contemporary—"the practical self-made man, whose acquaintance with design is limited."

He is "hardly creditable to the profession," and that is why we are trying to keep him out of it till he has qualified himself to pursue it. But to the next indictment we take serious objection.

Then there is type No. 3 (we say this gently)—the all-round inefficient and not wholly scrupulous type. It is not always wise to call a spade a spade; but there are times when the word "shovel" would be misleading. We cannot disguise the fact that there is the architect who "fixes" it with the contractor, and who conducts his business on the "one-client-one-job" principle, making the most of his opportunities accordingly. This, perhaps, is the most dangerous type. He cannot be relied upon to make an honest selection from the firms tendering, and the fairest building contract under his enforcement is jeopardised in its every clause. Attributes of this type of architect are indefiniteness in plan and looseness in specification, as a result of which unfair difficulties arise during the erection of the building. . . . We believe it to be a conservative estimate that type No. 3, to whom we have referred above, himself occupies 50 per cent., leaving, perhaps, the other types in equal proportions of less than 17 per cent. of the whole. Let us consider, then, that we are concerned mostly with type No. 3. Upon this type in general we would impress the fact that he is employed both for sound design and sound construction, and that he is legally responsible to his employer for shortcomings in this regard."

Was ever a more slanderous statement bracketed together with a vague insinuation? to support which four cases only are quoted as follows:—

Of recent years such slipshod practices have crept into the architectural supervision of building construction that opinion as to the responsibility of the architect in this connection is in a very nebulous state. But in this regard, as in the case of many other troubles which seem to have become accentuated in recent years, the law has many well-established precedents. For instance, we recall an action (*Leicester Guardians v. Trollope*, 75 J.P. 197, Channell, J.) in which an architect was sued by a public body and shown to be liable for dry rot which broke out

in the floors of a new building four years after its completion. The floor was laid over concrete, and the defendant was shown to have been negligent in permitting faulty construction.

The Province of Quebec holds the architect responsible for defects in buildings for a period of no less than ten years. In one case (*Scott v. Christ Church Cathedral*, 1 L.C. L.J. 65) this liability was maintained despite the fact that the architect against whom judgment was awarded had taken over the work from another architect and assumed charge subsequent to the preparation of plans.

Quebec provides us with another case (*David v. Macdonald*, 8 L.C. Jur. 44, 14 L.C. Rep. 31) where the architect and contractor were held jointly responsible to the owner for damage incurred in the sinking of the floors of a building occasioned by the insufficiency of the timbers specified.

Only the other day, in an action brought by Mr. Colborne Meredith against the Roman Catholic Episcopal Corporation of Ottawa to recover fees in connection with the erection of a parish-house, Mr. Justice Middleton scored the plaintiff for not insisting upon the construction of the roof as laid down by contract. His Lordship characterised the work as a "botched job," and decided that the architect would have to compensate the owner for the work of reconstruction.

Our own readers, of course, perfectly well remember the first case quoted, and we are not going to repeat our own comments at the time. All we care to say is, that if there is no more warrant for bracketing the Canadian architects concerned with "Type No. 3" than there is for any such suggestion as far as the English architect referred to is concerned, they, too, are similarly libelled, and we deny absolutely that the next paragraph quoted is in the least degree true:—

Our criticism of type No. 3 is surely exemplified by the cases cited above. We have nothing against the efficient architect who is labouring in such a small minority: our opposition is to the unbusinesslike—if not unprincipled—characteristics of the professional misfits that are figuring so largely and prominently in the Courts to-day. In using the term "unbusinesslike" we follow the precedent of no less an authority than Mr. Justice Falconbridge, who employed it in a recent judgment. Thus we find the work of the most common type of architect characterised by lack of foresight and lack of care, reflected in indefinite specifications and an altogether inadequate appreciation of the fundamental responsibilities of the profession. Such inefficiency is a prolific multiplier of those "extras" which are the bugbear of the building-owner.

The "other phases of architectural inefficiency" which the *Contract Record* proposes to discuss later may or may not be worth notice. Had what it has published appeared in the pages of a less reputable journal, we should have taken no notice. In previous issues we have—or we think so—gathered the impression that alive as we are, to the real defects, not of archi-

fects, but of those who are allowed to usurp the name, it was helping those in Canada who are striving to eliminate such, as we are striving here, our contemporary was doing good service to the common cause. It is disappointing to find 50 per cent. of our Canadian brethren marked down under "Type No. 3," especially just now when Canada is doing her share to the hilt, and more, in the defence of the world's freedom from militarism.

THE REPORT OF THE LAND INQUIRY COMMITTEE.*

URBAN LAND TENURE.

Having had the opportunity of perusing the exhaustive and well-considered paper which has been prepared by Mr. Head, I am in the fortunate position of being relieved from having to deal with much of the detail which would otherwise have called for comment. The Committee pass comparatively lightly over freehold and long leasehold tenure, under which thirteen-twentieths of the population of England and Wales live, and which usually prevail in the district which I may be said to represent. I therefore propose in these notes to deal more particularly with these two systems, pointing out the conditions prevailing in the Manchester district, and their effect on industry, and later touching very shortly upon more general topics. The short leasehold system, against which complaints have so largely been directed, does not obtain in the city of Manchester and the borough of Salford, except in a small central area and an inconsiderable working-class and works district, where leases were granted for ninety-nine years, at dates ranging from 1820 to 1861. Some of these leases, the terms of which expire in about four years' time, are already presenting difficulties with regard to renewal, it being difficult to convince the lessee of the fact that his interest is really limited to the four unexpired years, and that renewals should properly be calculated on the provisional valuations served upon both lessor and lessee, in that reversion duty would become payable, even if concessions were made to the latter on renewal. A satisfactory settlement is not rendered more easy by the fact that the lessee, who is often not too well off, generally points out that the property was built by his grandfather or father, and that he has either a mortgage upon it or has borrowed money in some other manner upon his interest, and expresses an opinion in very vigorous Lancashire dialect that the property is filched from him.

The buildings upon the short leasehold areas in the Manchester district are mainly old, built sixty to eighty years ago, some having already been condemned by the local authority, while others need to have the sanitary accommodation remodelled. It may be said that under the conditions of the lease the lessor doubtless has power to compel repair under a threat of forfeiture; but there is a natural tendency to be less severe as the term becomes short, and the fact remains that, generally, the condition of this property is not what it would be if the lessee possessed a longer interest, as, indeed, may readily be seen by a comparison with property of a similar class in close proximity held subject to leases of 999 years. The possession of the freeholds in the short leasehold areas is in the hands of five bodies of trustees, who are bound, as the Land Committee point out in their Report, to exercise their legal rights; indeed, it is their moral as well as their legal duty to do so, a fact which still further adds to the difficulty of settlement. Such difficulties, I imagine, must be experienced wherever short leasehold terms come to an end, and it is for us as surveyors to determine whether some means cannot be found by which the admitted advantages of the leasehold system may be retained, while eliminating the irritation and

sense of unfairness which are at present aroused. Between the early part of last century and the "sixties" it became customary, with the exception of one small charity estate, to increase the term for which leaseholds were granted from 99 years to 999 years. This change, I have always understood, was done to the initiative of the lessees, who, owing to there being a number of competing landowners in the market, were in a position to impose their wishes upon them, and refuse the shorter term.

In the case of land in the central area ground-rents are now usually calculated on the basis of the site value, which exceeds the capitalised value of the rent of the old property, the buildings therefore being treated merely as old material. In the less central districts, where working-class dwellings and manufactories are found, leases are renewed for the longer term of 999 years at higher ground-rents, based partly on the increased value of the site and partly on the value of the buildings, having regard to the figures set forth in the provisional valuations. And now, with the exception of the comparatively few short-term leases to which I have already referred, the whole of the land forming the thirty townships comprising the ancient parish of Manchester and the county borough of Salford, an area of upwards of sixty square miles, is either freehold or long leasehold in tenure, the proportions being about equal, though some of the freeholds are subject to a chief rent. Copyholds and leases for lives are unknown in the district. There is really very little difference between a chief rent, a Scotch feu, and a lease for 999 years, except that the first-named are freehold, and descend as real property, and the long lease is personality, and dealt with as such. In this connection it is, perhaps, worth noting that estate duty is payable in the case of the lease in one sum within twelve months of the date of the death, with 3 per cent. interest, the same as other personality; while in the case of property subject to a perpetual rent-charge, estate duty is not payable until twelve months after death, and can be paid in eight yearly instalments with interest at 3 per cent. on the unpaid balance. The chief-rent system has been in existence in the Manchester district for upwards of 150 years; but it must not be taken to denote, as is the case in some districts, a species of rent service or an interesting link with feudal customs, but merely a rent-charge whereby it was customary to grant land in fee for building purposes, subject to the payment of an annual rent in perpetuity. Under this system it should be noted that any increment in value would vest in the grantee or his successors in title. The conveyance of land on chief rent may contain restrictive covenants as to trades, building ties, etc., just as may short or long leases, and it is evident that the longer the term to which they apply the more probable it is that building developments and improvements, changes of fashion, scientific discoveries, and the like, will cause them to become out of date. How best to deal with obsolete restrictions of this kind, no body of men is better adapted to decide than members of the Surveyors' Institution, and I hope that in the discussion which will follow some light may be thrown upon the problem. I myself feel very strongly that an application to the freeholder, or the owner of a chief rent, for the annulment of a restriction should not be made the subject of a claim for compensation unless consent would result in a definite depreciation in the security. Clearly, reasonable charges for technical or legal advice as to the wisdom of granting the request might fairly be claimed; but most of us have met cases where perfectly legitimate appeals for permission to abrogate out-of-date restrictions have been made use of to bolster up claims which could not be morally justified, whatever the legal position might be. Probably experience would show that when these occur the offender is usually the holder of merely an intermediate interest; but that makes it all the more desirable that some procedure should be established for preventing any person using a technical legality for vetoing

a necessary improvement, through which he would sustain no loss, or employing his powers as a lever to extract compensation to which he had no moral right. Among other powers reserved under the chief rent system is one for re-entry on nonpayment of rent for twelve months; this condition naturally does not often have to be enforced, and after the demand for rent has been satisfied the grantee resumes possession.

A disadvantage, which applies equally to the chief rent and the leasehold systems, and to which reference was made in the Land Committee's Report, is the continued liability of the lessee or each successive assignee to pay the chief or ground rent. A continuing liability of this kind, especially when an estate has to be wound up, gives rise to difficulties for which there appears to be no commensurate advantage. The protection afforded by the usual conditions inserted in leases to owners against loss through assignments to unsubstantial or improper sub-tenants, is obviously reasonable; but, provided that the lessor is given the opportunity of satisfying himself that the proposed sub-tenant is a suitable person, it is difficult to see what material argument can be advanced in favour of retaining the liability of the original lessee for an indefinite period. I should be glad to hear the views of my fellow-surveyors on this point. In the case of a chief rent this liability ceases upon the death of the original grantee or after the distribution of his estate. Afterwards the owner of the chief rent must look to the property forming the security of the rent-charge, and if insufficient the last payer may divest himself of his legal estate, and so escape further liability to pay the amount accruing due. The position is clearly unsatisfactory, and needs amendment.

In the Manchester district mills, factories, and trade premises are almost entirely erected upon freehold land, subject to a chief rent, or on long leasehold tenure, and, therefore, are not subject to many of the disabilities which are discussed by the Land Inquiry Committee. It is to this fact, I consider, that the growth of Manchester is to a great extent due, as the prevalent systems of tenure enable a merchant, manufacturer, or tradesman to acquire the site of his residence or works without depleting his capital by the payment down of a considerable sum. At the same time, full security of tenure is provided, and builders, on whom rests, to so great an extent, the responsibility of erecting houses for the working classes, have been enabled to create second chief rents or obtain mortgages, and have thus been provided with the means of carrying on that useful work. The new building regulations, the increased cost of labour, materials, and street-making charges, have, among other causes, resulted in a noticeable diminution of late years in cottage building in South Lancashire; but where working-class dwellings are being erected the ground-rents, apart from paying charges, are about two-thirds the price obtainable ten years ago. While all will agree, I think, that we cannot expect to stand still, and that progress can only be attained by recognising the necessity of development, we must equally have a care lest we do harm by attempting too much. In offering this warning, however, I must not be taken as being opposed to necessary and well-considered changes. For example, I am of opinion that the time has arrived when some tribunal should be established for settling points in dispute between owners of trade and industrial property and their tenants.

I need not, perhaps, attempt a schedule of all the cases in which the right to appeal could be justified. The most common would doubtless be in connection with the terms of renewal. And I venture to think that unless premises are to be pulled down as part of an improvement scheme, or otherwise used for purposes more necessary to the community, a trade tenant who had occupied the premises for a sufficient period to establish a goodwill—I will put it at fourteen years, although I am open to argument on that point—should not be placed in a position of inferiority in bargaining with his landlord by the feeling

* A paper read by JOSHUA BURY, F.S.I., at the meeting of the Surveyors' Institution, Monday, Jan. 25, 1915. (See pp. 121-5 in last issue.)

that his goodwill can be placed in the scale against him. Section 11 of the Agricultural Holdings Act lays down the principle that a tenant should not be dispossessed except, among other things, for reasons inconsistent with good estate management, nor can the rent of the farm be raised by reason of his own improvements. The same principle seems to be involved here, and neither a trade tenant's goodwill, nor, in the absence of a contract to the contrary, his improvements, should be taken into consideration in calculating his rent on renewal. At the same time the tenant's interest should not be permitted to stand in the way of property being put to its highest use, such as would be required by the best estate management. In such cases, as is recognised by the above-mentioned Section 11, "Compensation for disturbance," to use the term of the Agricultural Holdings Act, could hardly be justified; but possibly something might be done to meet the tenant by extending the period required for the notice to quit. The policy of most estates would, as a rule, be settled sufficiently far ahead to enable this to be done without great inconvenience.

The question of improvements is a difficult one. Under the usual conditions of a building lease, not only the building erected in accordance with the terms of the contract, but also improvements made at any time during the period of the lease, become the property of the owner at its determination, a fact which, whatever explanations may be offered, does give rise to the feeling of unfair treatment and soreness to which I have already referred. Obviously, existing contracts should be respected; to do otherwise would be to mulct one set of persons for the benefit of another in no way more deserving. But there is certainly something to be said in favour of the provisions of the Town Tenants (Ireland) Act with regard to improvements under future contracts. All will agree that care should be taken to prevent a tenant altering the character of premises which have been let to him for a certain purpose; but they will also agree that every proper facility ought to be given to encourage trade enterprise, and that where these two propositions seem to clash there is much to be said in favour of an impartial decision as to which should prevail. But that decision must not only be impartial, but of such a practical nature as to inspire the public with confidence.

I have already referred to the difficulties which arise through the lack of elasticity in leasehold tenure in allowing for modern development and the removal of obsolete restrictions, and to the need for some simple method of overcoming these difficulties. Possibly this might be found in the more elaborate form of tribunal to which I have referred. But it is equally necessary, I think, to prevent applications for permission to carry out necessary improvements being made the occasion for monetary claims, provided that the security of the original ground-rent for the remainder of the current term, and the reversionary interest at the end of the term, are not depreciated. In such cases an appeal to the single arbitrator would usually suffice, and it is probable that the mere fact of its existence would insure that it would seldom have to be used. In speaking of improvements here, I am, of course, referring to those of a substituted character which would be made by tenants having still a considerable number of years to run. Where the term was short there would be little hardship in the tenant waiting until the determination of his tenancy.

The time at my disposal is short, as I do not wish to take up too much of the time which should be devoted to discussion; but I may perhaps be forgiven if I step back from Part III. of the Report, which we are considering this evening, to Part II. (The Acquisition of Land by Public and Quasi-Public Bodies), which was discussed at the last two meetings. Little, if anything, was said then about the proposition that private persons or companies should be empowered to acquire land compulsorily, and this I gathered, from reading the discussion, was because it was felt that that proposition

could be dealt with better under the heading of "Tenure." It is suggested by the Land Committee that landowners are in a position "to stifle the free and healthy development of the countryside," either by the refusal to sell land for the extension of industrial premises which are beneficial to the neighbourhood as offering means of employment, or by asking such a price as is practically prohibitive. And a recommendation is made that in the interests of the community powers should be conferred upon private persons, under carefully defined conditions, to acquire the land needed for such extensions, by compulsion if necessary. The Committee quite properly point out a number of reasons why it would be unwise to give private persons an unlimited right to apply for compulsory powers when desirous of purchasing or leasing land, and their recommendation is restricted to cases in which the application for powers has first received the sanction of the local authority, and has afterwards been approved by the Government department concerned. There is certainly something to be said in favour of the adoption of some form of procedure which would prevent an obstinate or selfish individual from using his legal rights unreasonably to check the development of an industrial district, and the prosperity of its inhabitants; but the legal rights of one individual should not be limited merely for the benefit of another individual, and the greatest care would have to be taken that no such powers of acquisition were granted unless it were obvious that definite public advantage would be attained. I am not clear how far the existing provisions of the Housing, Town-Planning, etc., Act, 1909, would enable this to be done, but I have no doubt that with some small amendment the necessary power could be given through the instrumentality of the local authority.

In conclusion, I would again draw attention to the President's warning against the economic error of doing anything which would tend to repel capital from investment in land and buildings.

PROVIDENT INSTITUTION OF BUILDERS' FOREMEN AND CLERKS OF WORKS.

The annual dinner of this deserving and useful institution was held on Saturday evening in the King's Hall, Holborn Restaurant, the attendance being the most numerous on record. Not only was every seat in the hall occupied, but tables were placed under the arcades and in the gallery. The chair was occupied by Mr. A. H. Adamson, of Messrs. Adamson and Sons, Putney, who was supported by Messrs. John Adams, Maurice B. Adams, F.R.I.B.A.; — Blake, J. Dixon Butler, F.R.I.B.A.; T. Costigan, — Homan, Johannes Langejan (a Dutch architect), G. Mitchell, Alexander Ritchie, J.P.; Chas. Roffey, S. Roffey, John Todd, M.S.A.; Wm. Woodward, F.R.I.B.A.; etc.

The chairman, in proposing the toast of the evening, "Continued Success to the Provident Institution of Builders' Foremen and Clerks of Works," remarked that the institution had existed since 1842 for the purpose of granting pensions to aged and infirm members, their wives and children, and for making grants of temporary relief. During the seventy-three years it had been established it had paid away £19,401 8s. for these worthy objects, and last year the pensions granted amounted to £645 9s., in addition to £30 given as temporary assistance. The member's subscription at the age, say, of forty was £2 a year, and they gave pensions of from 15s. to 17s. a week to those unable to work. It was obvious that the benefits could not be maintained except for the generous aid of architects, builders, builders' merchants, and other friends. Last year these outside donations amounted to £226 16s., and the directors were greatly cheered by receiving from Mr. George Neat, the sole executor to the late Mr. Frederick Ingle, of Messrs. Dennett and Ingle, a cheque for £567 13s., from a legacy left for distribution among building charities at Mr. Neat's

discretionary power. He would earnestly appeal to those present to make the sum contributed that evening equal to the amount raised last year. A twelvemonth ago they met under the shadow of the building strike, and this year they had to face a still graver problem, which would present itself at the close of the present disastrous war. "Business as usual" was a taking phrase, but it did not meet the actual circumstances in which they were placed. Out of the war good had arisen, in the growth of a spirit of self-sacrifice, of friendship, and of mutual help between employer and employed. Rudyard Kipling had said that non-commissioned officers were the backbone of the Army, and those who benefited through the Provident Institution, the builders' foremen and clerks of works, were undoubtedly the backbone of the building trade, and it was only by co-operation and comradeship throughout the trade that things could be made to go smoothly in these difficult times. Every builder knew how much practical responsibility for the success of a job rested on his foreman-in-charge, and every architect knew how dependent he was for the faithful execution of the contract upon the clerk of works, and, therefore, the claims of the institution appealed strongly both to the profession and the trade.

Mr. John Beer, corresponding secretary to the institution, replied, observing that dark days appeared to be in front of the institution and its members. The work of the builders' foreman grew year by year more onerous and more anxious, and if it was to be a success he must show a real interest in his work and in the financial success of the contract.

Mr. George Mitchell, of the Limmer Asphaltic Co., proposed the health of the "Architects and Surveyors." He trusted that the Royal Institute of British Architects would speedily settle a revised form of contract, in which the position of the sub-contractor would be better defined.

Mr. William Woodward responded in a breezy and anecdotal speech, in the course of which he said he was a member of a sub-committee of the Royal Institute of British Architects who were engaged in the revision of the form of contract; the great difficulty was how to deal equitably with sub-contractors. Personally, he was in favour of eliminating reference to this class altogether, except in a few limited instances.

Mr. John Todd, district surveyor for the City of London, gave some humorous stories of his experience as a clerk of works on the expiration of his articles, and added that the district surveyor went out for the express purpose of seeking trouble. There was very little friction in supervising the erection of a £50,000 building; it was the £50 job, in which no clerk of works could be employed, and where very often there was no foreman, that needed close watching.

Mr. Maurice B. Adams, in proposing "The Governors, Trustees, Donors, Subscribers, and Visitors," remarked that a large order had been placed in his hands; but the institution was largely supported by these friends in its beneficent work of helping lame dogs over stiles and in promoting good fellowship and friendship among all sections of the building trades.

Mr. J. C. Hill, of the London Brick Co., responded.

The concluding toast was that of "The Chairman," proposed by Mr. Alexander Ritchie, and received with cheers and musical honours.

In responding the chairman referred to the energetic labours of their hon. secretary, Mr. Ernest Searchfield, to whom the continued prosperity and usefulness of the institution was largely due.

A musical programme followed, the contributions of Mr. William Woodward, "The Boys of the Old Brigade," with its rollicking chorus, and "Drake goes West," being enthusiastically received.

At the close of the evening the chairman announced that the promises and donations amounted to £232; the amount was raised to £250 by a further donation from Mr. Woodward.

CONCRETE SEPTIC TANKS FOR COUNTRY AND SUBURBAN HOUSES.

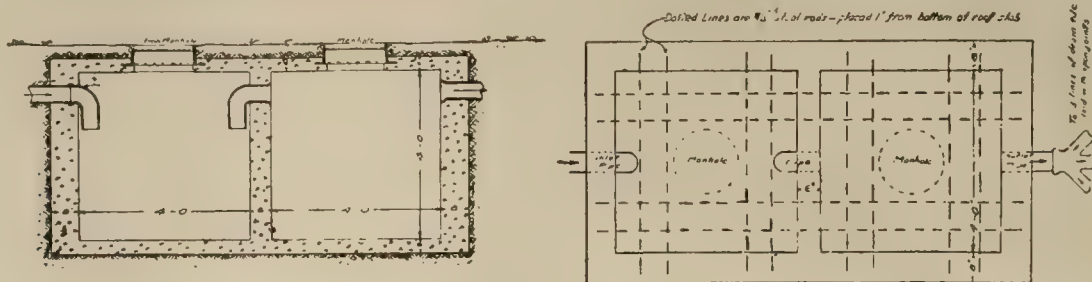
SIZE AND LOCATION OF TANK.

While the odour from a septic tank is scarcely noticeable, it is nevertheless best to locate it at some distance from the house. Choose a spot easy to excavate, so that the top of the tank can be sunk 6in. below ground level, and where the lines of drain tile will have sufficient fall to carry off the

placed, deposit the balance of the concrete so as to bring the roof to a total thickness of 4in. As it will be covered with earth it is not necessary to give this top surface a smooth finish; merely level the surface by striking off with a straight piece of board. The tank should now be allowed to rest undisturbed for at least two weeks. At the expiration of this time, saw away wooden top of the forms inside of the manhole frames. Then enter the tank and remove the wooden forms, passing the lumber out of the man-

formerly occupied by Messrs. Coutts's Bank and Nos. 55 (East), 56, 57, 58, 59, and 60, Strand, had been acquired from the Marquis of Salisbury. The leasehold interests were acquired from Messrs. Coutts in 1904, and the premises are now utilised by the Council for office accommodation. The net cost of the improvement is estimated at £53,500, and as a result of the rebuilding the width of the Strand will be increased for a length of 100ft. from 51ft. 6in. to 80ft.

The question of the preservation of the



Construction of concrete septic tanks.

discharged fluid. The tank should be large enough to hold the entire sewage for one day. For a family of eight to ten people occupying a house having two bathrooms, fitted with the customary washstands, and downstairs the kitchen sink, a concrete tank having two compartments, each 4ft. long by 4ft. wide by 4ft. high, will be required. Since the top and bottom are each 4in. thick, and the top of the tank is 6in. below ground level, dig the pit 5ft. 2in. in depth. The walls of the tank are 8in. thick, and the partition between the two compartments 6in. Therefore, the length of the pit should be 9ft. 10in. and the width 5ft. 4in.

MAKING FORMS AND PLACING CONCRETE.

If the earthen walls of the pit stand firm only inside forms will be needed. These inside forms are merely boxes made of 1in. boards. The boxes will be required to make two compartments. The outside dimensions of the boxes should be 4ft. square by 4ft. high. The boxes or forms will be placed on the freshly-laid concrete floor. Holes for taking 6in. pipe should be made in the boxes, as shown in Fig. 1. The holes should be 4in. from the top of the box form, measuring from the top of the hole. The concrete should be mixed in the proportion of 1 part Portland cement, 2 parts sand, and 4 parts crushed rock or gravel. Place a 4in. thickness of concrete in the bottom of the pit, to form the door of the tank. On top of this concrete set the box forms, which should be ready for immediate use. Place the forms so that there is a space of 6in. between them and an 8in. space between them and the earthen walls of the pit. Then commence depositing the concrete for the walls and partition. As soon as the level of the concrete reaches the holes in the forms place in the holes 6in. pipes, as illustrated. Then continue the concreting until even with the top of the forms.

REINFORCED TOP AND MANHOLES.

Two ordinary iron manhole frames and covers may be obtained from a local dealer in building supplies. The manhole covers should fit tightly and should not be perforated. The manhole frames should be 10in. high, so that when placed on top of the forms the upper edge will be even with ground level. If the manhole frame is of less height than this, it should rest on a circular piece of 1in. board, which is nailed to the top of the form. Since the concrete roof is to be self-supporting, it will be necessary to reinforce it with a few lengths of 3in. round steel rods. There will be needed four pieces of 3in. rods, 9ft. 6in. long, and eight pieces 5ft. long. The roof is now ready to be placed. Place the manhole frames in proper position on top of the form, and deposit the concrete to a depth of 1in., and on the concrete lay the long and short bars, as shown in Fig. 2. When the bars are

hole opening. While in the tank make certain that the pipes are all unobstructed and not even partially clogged with dirt or lumber. The inlet-pipe is then connected to the pipe from the house, and the outlet-pipe joined to three lines of 3in. concrete drain-tile. The drain-tile will be laid about 12in. below the surface of the ground, and the joints left open—that is to say, no mortar must be used in the joints. This permits the discharged fluids to be absorbed by the surrounding soil. The drain-tile lines should be laid in the form of the letter "Y," and sufficiently extended to cover a large area of ground. Average conditions require that each arm be about 100ft. long. After this is done, cover the tank with earth to the level of the manhole covers. It is now ready for use.

MATERIALS NECESSARY.

A tank of the size specified will require about four cubic yards of crushed rock, two cubic yards of sand, and seven barrels of Portland cement. There will also be needed 78ft. of 3in. round steel rods, which can be obtained from the local blacksmith or hardware dealer. The tank can be built without skilled labour. It requires few tools, and construction methods are so simple that one man can build it.—Percy H. Wilson, in the "Building Age."

THE LONDON COUNTY COUNCIL.

At the meeting on Tuesday of the London County Council, the Improvements Committee reported the completion of the following new street widenings: (i.) Queen's-road, Peckham, widened from a minimum of 36ft. to 50ft. for a length of 670ft.; (ii.) Stanstead-road, Catford Hill, and Catford-road from 40ft. to 50ft. for a length of 3,495ft.; (iii.) Norton Folgate from 52ft. to 70ft. for 110ft.; (iv.) Stanstead-road, Brockley Rise, and Brockley-road, from 37ft. to 49ft. for 5,195ft.; (v.) Parks-road, Jamaica-road, Union-road, Lower-road, and Evelyn-street (Bermondsey, Deptford, and Greenwich), from 37ft. to 43ft. for 7,400ft.; (vi.) Battersea Park-road and Battersea Bridge-road from 37ft. to 45ft. for 1,413ft.; (vii.) Highgate-road from 40ft. to 43ft. for 755ft.; (viii.) St. John's Hill and Lavender Hill from 40ft. to 45ft. for 1,700ft.; and (ix.) rounding off corner of Lewisham High-road and Sharde-loes-road.

The committee recommended that an improvement in Royal Mint-street on the northern approach to the Tower Bridge be continued, at a cost of £1,250, by setting back the Rising Sun public-house and the premises next door, No. 13, thus increasing the width of the road from 48ft. to 61ft. for a distance of 40ft.

The committee reported that in continuation of the scheme for widening the Strand the freehold interest in the properties

17th-century frontage in Great Queen-street was raised by Mr. Hutchinson, who said they were stirred by the destruction of historic buildings in France and Belgium, and he wished to know the result of any steps taken to preserve Boswell's house in Great Queen-street. It was a fine 17th-century specimen of domestic architecture, and ought to be saved from the hands of the Huns.—Mr. Rostron explained that the Grand Lodge of Freemasons, who owned the old houses referred to, had been approached with a view to preserving the old fronts, but he regretted that hitherto the efforts had been unsuccessful, owing to difficulties of an architectural nature. The Council were continuing their efforts.

The most important business discussed at the meeting was the London and District Electricity Supply Bill, which has aroused considerable opposition among the local Metropolitan municipal authorities. The necessary resolution, confirming the decision to seek Parliamentary authority for proceeding with the measure, was submitted, and was strongly opposed. On a division, 61 voted for the resolution and 31 against. The full majority of the Council requisite to pass a resolution of the kind being 69, the resolution was declared lost. As a consequence the measure has been dropped for the present session of Parliament.

It was agreed that Mr. J. E. Worth, assistant in the chief engineer's department, who will attain the age of sixty-six years on the 19th inst., and is in charge of the main drainage works on the North side of the river Thames, having been responsible to the chief engineer for the supervision of contracts for most extensive works, be retired from the service. Mr. Worth, whose salary is £800 a year, will receive £252 a year as superannuation allowance.

At the meeting yesterday (Thursday) of the City Court of Common Council, Mr. Thomas Francis Rider, the well-known builder, was elected as their representative on the council of the Metropolitan Hospital Sunday Fund, in succession to Mr. Matthew Wallace, resigned. Mr. Rider had received in a ballot of the Court 87 votes against 33, 22, and 13 given to three other councilmen nominated.

The corporation of Ipswich are building in Elms street, near the centre of the borough, a block of public health offices, two stories in height, at a cost of £7,300. On a ten-acre site, two miles beyond the borough boundary, there is also in course of erection a smallpox hospital, comprising administration block, pavilions, laundry, and mortuary; the estimated expenditure is £4,800. The isolation hospital is being enlarged by a block of twenty-four beds, and is being provided with fresh heating apparatus, at a total outlay of £11,200, and tenders have been invited for a further addition of two pavilions, each of twenty beds. All these undertakings have been planned in the office of Mr. J. R. Mead, the borough engineer, and are being carried out under his supervision.

Corrente Calamo.

On Monday last, at a general meeting of the Royal Institute of British Architects, the draft of the concluding clauses of the "Conditions of Engagement and Terms of Remuneration of the Architect, as Sanctioned by the R.I.B.A.," came up for consideration, commencing with Clause 10, the foregoing ones having already been adopted by previous meetings and passed by the general body. The questions involved on this occasion included dealing with Estates, Lessee's plans, Dilapidations, Sanitary Inspection, Valuations, Compulsory Claims, Purchases of Properties, Litigations and Arbitrations, also out-of-pocket expenses. It will thus be seen that all the matters dealt with were concerned with the surveyor's side of an architect's business. The gathering was well attended and representative in character. Subject to some verbal modifications of a minor character, the schedule presented to the members was finally adopted nem. con., it being agreed that, after having been submitted to the Institute's legal advisers, the Council be empowered to publish the new scale, but subject to the proviso that it would be inexpedient to do this at the present juncture, pending the settlement of the war. The President announced that the Council had decided to nominate as a fit recipient for the Royal Gold Medal for 1915 the name of Mr. Frank Darling, of the firm of Messrs. Darling and Pearson, of Toronto.

If an "Advertisement Expert," whose utterances are quoted by the "Journal of the Society of Architects," from a magazine with which we are unacquainted, has no better reason for his appeal to architects to advertise than that he adduces, his advice is possibly not worth much. He says: "The architect, for instance, could do what he cannot do now; he could issue a small portfolio or booklet of illustrations of the various buildings which he had designed, and which have been built to his specifications. These he could send out as evidence of his ability and as actual proof of real experience. At present he must not make himself known. He may have an office and he may have his name on the door, but he must not ask for work. That is the professional crime. If commissions come to him, well and good; if they do not, he must not go out in search of them." What hinders architects from illustrating their buildings in our own pages? That is not advertisement. It is legitimate and beneficial publicity which we are always glad to facilitate, because such kindly co-operation is a generous contribution to the general knowledge, to which our own happy experience is the younger men, who benefit, are glad to add their own quota when the good times come. Possibly we should soon have to stop it if it became the province of the "advertisement expert" to organise it!

There appears to be little chance for private legislation during the Session just opened. The Local Government Board is obviously averse to the desirability of launching new municipal schemes in the existing national circumstances, while the railway companies, very naturally, are not pressing forward any extensive plans for development. Probably the only classes who will severely suffer immediately from this

abstinence from advance are the members of the Parliamentary Bar, experts, and the Parliamentary agents. Already they have been hit to some extent by the adoption, several years ago, of a system of devolution in private Bill legislation affecting Scotland. The present cessation of all such effort in the remainder of the United Kingdom, however, is none the less a disappointment, and one which will be indirectly felt by many others.

The Canadian civil engineers are discussing Registration. Those who are opposed to registration hold that by such means the public would secure no additional protection against the professionally inefficient. They cite the legal and medical professions as providing thousands of "fakes" who manage to pass the required test. It is contended that one of the most aggravating difficulties in the way of enforcing a licensing bill is to determine the character of the examination. Concerning such examination, the "Engineering Record" says: "It must necessarily be sufficiently elementary to allow comparatively newcomers in the profession to pass, yet such an examination is not a criterion as to the ability of a man to design a large structure, in which the hazard to life and property is much greater than any work that would be entrusted to a man who could barely pass the stated examination." In regard to this the Canadian "Contract Record" asks, and it seems to us reasonably, "Is it possible that the requirements would have to be so elementary that they would not act as an effective bar to admitting to the profession men incapable of observing those fundamentals of their work which, after all, reduce to a minimum the 'hazard of life and property'?" It is held that the wisest course for engineers to pursue is to direct their efforts to securing legislation making for the examination of engineering work rather than the examination of the engineer. This seems like putting the cart before the horse. If it were possible to work such a theory back to the beginning of all engineering undertakings, where would it find us?"

A report prepared by the Illinois Chapter of the American Institute of Architects upon the problem of estimating by contractors under the present methods states that members of the chapter investigated the office work of five representative contractors. They found that the average number of contracts estimated by each contractor in one year was twenty-two, the average number of jobs which he obtained from these estimates was ten. The average value of the time spent by the office force of each firm on each estimate, including additions by sub-contractors and material men, was 503dol. The report points out that the cost of six bids on a building costing between 100,000dol. and 150,000dol. ran to over 3,000dol., that is, between 2 and 3 per cent. of the whole cost of the work. Perhaps in no other business to-day is so much unproductive work done at so high a cost.

The Board of Trade draw the attention of manufacturers, merchants, and shippers to the following regulations governing the export of articles destined for the use of the French Government: (1) Application for permission to export to France goods of which the export is prohibited by Proclamation will receive special consideration if it can be

clearly shown that the goods are destined for the use, directly or indirectly, of the French Government. Such applications must be made to the Commission Internationale de Ravitaillement, India House, Kingsway, W.C. (2) Documents issued by provincial military or naval officers, other local authorities, or Government contractors in France will not be recognised as evidence of the destination of the goods unless formally approved in writing by the competent Department of the French Government. (3) British manufacturers, merchants, and shippers are accordingly warned that, before entering into any contracts for the supply of goods stated to be for the use of the French Government, they should first obtain from their clients written evidence that the approval of the Ministry of War, Ministry of Marine, or other Department concerned has been obtained. (4) Application for permission to export the articles in question must then be made in writing to the Commission Internationale de Ravitaillement accompanied by the necessary documentary evidence. The applicants should not proceed with the execution of the order until they have satisfied themselves that a permit to export will be granted. Any firms accepting contracts without complying with the above regulations will do so at their own risk and with full knowledge that permission to export the goods which they have contracted to supply may be refused. Applications for permission to export goods which are ordered by firms or individuals in France for purely industrial purposes, and which are not destined for the use of the French Government, will continue to be made in the ordinary manner to the Commissioners of Customs and Excise, Customs House, E.C.

"When in doubt ask a sculptor"! We hope the sound common-sense of Mr. Justice Bargrave Deane will commend itself to more of his brethren on the Bench, and are sure advantage will always follow the discriminative resort to really expert help. Struck by the extraordinary likeness of the boy Charles E. E. Slingsby to his father, Mr. Justice Bargrave Deane was first inclined to seek the assistance of a surgeon or medical man; but reflection induced him to ask Sir George Frampton, the well-known Royal Academician, to help him. Sir George Frampton pointed out to the Judge, first of all, that which the latter had noticed, the extraordinary resemblance to the father. Then he said, "I would like to see Mrs. Slingsby, for this reason: I noticed the left ear of the boy was rather oddly shaped. I want to see Mrs. Slingsby's ear." Accordingly the Judge had them in his room, introduced Sir George Frampton to the counsel, and left them. He told the Judge after that he had got the lady to raise her veil and show her left ear, and he said there was a most extraordinary resemblance between the little boy's left ear and Mrs. Slingsby's. It is quite true, as the Judge remarked, that one may be deceived by likenesses. Children, undoubtedly, in growing up, acquire actions and attitudes resembling their parents'. But a child cannot acquire the shape of his father's jaw or his mother's ear unless it is congenital. Looking at the old cases on the point, the Judge found that Judges in old times have said this may be a very false point to take, that of likeness, which may be the strongest piece of evidence in the case. But in every case surely first of all it is desirable to see

how the facts shape themselves, and then see whether this question of likeness comes in as material or not. That it did so in this case, and that Sir George Frampton has contributed in a marked degree to a right decision, there can be no possible doubt.

Councillor Ross Clyne proposed to ask the Manchester City Council last Wednesday to appoint a special committee to inquire into the methods adopted in connection with civic architectural matters, with a view to their possible improvement in efficiency and economy, and to advise the council with regard to the advantage or otherwise of inviting the services of firms of architects in private practice, thereby enabling the city architect to devote himself to advisory and supervisory work in connection with plans, building operations, and so on. The resolution, however, was withdrawn, with the consent of the council, evidently not for lack of time, because it is stated that "The council concluded its business in about five minutes over an hour—an event without precedent in the history of the council, so far, at least, as the oldest member's recollection goes." Perhaps, when things are less rushed, it may be found possible to discuss, and not to shelve, a matter which, remembering some recent circumstances, would seem not unworthy of the consideration of the citizens of Manchester.

OBITUARY.

On Monday last, we regret to say, the founder of Bedford Park, Chiswick, Mr. Jonathan Thomas Carr, died at his residence, 13, Queen Anne's-grove, Bedford Park, in the seventieth year of his age. For some weeks the deceased had been suffering from a cough and influenza cold; but last Friday he had so far recovered that he went out, which brought on a relapse, so that by Sunday his condition was extremely serious, some sort of seizure having intervened, with the result that the community of Bedford Park has lost its originator, who in 1877 conceived the idea of erecting a model village and artistic centre, which was the pioneer of all subsequent town-planning suburban enterprises. At the outset he employed Edward W. Godwin, F.S.A., and then Norman Shaw, R.A., to design the original houses. The church, "Tabard Inn," and stores, also the club, were the work of Shaw. The school of art was carried out by Mr. Maurice B. Adams and the vicarage by Mr. E. J. May, both the last-named architects being occupied at various times in erecting houses and studios. Mr. Adams's work likewise included St. Michael's parish-hall and the Chapel of All Souls, as well as the completion of the church. Messrs. Coe and Robinson designed some of the houses in the avenue. Mr. Carr built himself a large residence from Shaw's plans, and it was known as "Tower House"; but of late years the premises have been used as St. Katherine's private R.C. School for Ladies. Mr. Carr's projects at one time were more ambitious and extensive, for he conceived the idea of converting Baron Grant's partly-finished house and grounds into "Kensington Court" at Knightsbridge and "Whitehall Court" on the Thames Embankment was another scheme of his, and in which Jabez Balfour was concerned, Messrs. Archer and Green being the architects. He had at one time a hand in the flotation of the Lyceum Theatre, after Sir Henry Irving's time. His versatile and optimistic character, in spite of many reverses of fortune, made Mr. Carr very popular socially, and his personality will be greatly missed by his neighbours. His brothers—Mr. Comyns Carr and Mr. David Carr—survive him; Mr. J. F. Carr, barrister-at-law, his only son now living, resided with his father. Mrs. Carr died some years ago. The funeral took place at Chis-

wick Cemetery (St. Nicholas Churchyard) yesterday.

The death took place on Sunday week of Alderman Richard Evans Willoughby Berrington, J.P., civil engineer, at his residence, Penn-road, Wolverhampton, in his sixtieth year. The deceased gentleman was a native of the town. He qualified as a civil engineer and undertook an appointment as a surveyor in the West of England. In 1886 he returned to Wolverhampton, and was appointed borough engineer, and continued in that position until 1894, when he retired and commenced private practice. He specialised as an expert in water and drainage engineering, and had carried out a number of important works in different parts of the country. He became a member of the town council in 1895, and was mayor in 1904-5; during the latter year he was elected an alderman, a post he held up to his death. He was chairman of the health committee and was also a borough magistrate. He had been married three times, and his third wife, formerly Miss Julia Edridge, who survives him, is a member of the board of guardians. He has left three sons, of whom the elder, Mr. Ernest Berrington, was his partner in the profession.

The death has occurred of Mr. F. W. Rudler, I.S.O., F.G.S., Curator and Librarian for many years of the Royal School of Mines and Museum of Practical Geology. He held the Lyell Medal and was formerly Professor of Natural Science in the University College of Wales, and a past-President of the Anthropological Department of the British Association and of the Geologists' Association. He was well known as a writer in the scientific Press and contributor to the "Encyclopædia Britannica" and other valuable works, and was in his seventy-fifth year. The remains were cremated at Golders Green on Tuesday.

CHIPS.

Mr. Christopher Drummond, of Fleetwood, Lancs, retired builder and contractor, who died on Oct. 1, has left £30,143.

Mr. Banister Flight Fletcher, F.R.I.B.A., has been re-elected chairman of the City of London Schools' Committee of the Corporation of London.

The organ in St. Paul's Church, Stansford, was brought into use again on Sunday, after renovation and enlargement by Messrs. Morton and Moody, of Oakham.

Mr. Reginald Blomfield, R.A., Past-President R.I.B.A., and Mr. Ernest Newton, A.R.A., P.R.I.B.A., have received the honour of election as Membres Correspondants of the Société des Architectes Diplômés par le Gouvernement Français.

At the Swansea Exchange, which we illustrated last week, the lifts (four in number) were installed by Messrs. Smith, Major, and Stevens, Ltd. (late A. Smith and Stevens), the well-known lift engineers, of Abbey Works, Northampton.

A new parsonage is to be built for St. Anne's Church, Bristol, in First-avenue, St. Anne's Park. The contract has been undertaken at £1,470 by Messrs. T. Lovell and Sons, of Bristol, and the architect is Mr. Alfred Harford, of Park-street, Bristol.

Count G. N. Plunkett, H.A.R.I.B.A., has been elected President of the Royal Society of Antiquaries of Ireland, which is promoting the movement for the preservation of the abbeys, churches, castles, earthworks, and other ancient remains throughout the country.

Mr. W. H. P. Sherman, M.I.C.E., late superintending engineer of the Indian Public Works Department, died on Sunday at Bridge of Allan, N.B., aged sixty-nine. He entered the Indian Civil Service in 1866, and became superintending engineer in 1892, and retired in 1899.

By the death of Mr. Robert Thomson Barbour, Melbourne has lost one of its public men who was very prominent in the sphere of quantity surveying, which art he had practised for over thirty years. He represented Hawthorn in the State Parliament for some years as a Liberal, and acted as a Justice of the Peace. He was also a member of the Hawthorn City Council, and had served as mayor of that borough for two years.

Building Intelligence.

DALZIEL, MOTHERWELL.—The rebuilt United Free church at Dalziel, near Motherwell, was dedicated on Saturday by the Rev. Dr. Reith, Moderator. At the Disruption, in 1843, Dalziel was a rural parish, and the town of Motherwell had not arisen. In 1844 Dalziel Free Church was built on the present site, and an enlargement was carried out in 1870. In turn this enlarged church became cramped, and structural deficiencies were more apparent. It has now been rebuilt from plans by Mr. Henry F. Kerr, A.R.I.B.A., Edinburgh, the Early Byzantine style being adopted. A feature of the plan is the domed roof, formed upon steel framing springing from eight stone columns placed in a circle of about 40ft. diameter. This dome, which is 40ft. in height, is pierced with sixteen windows, through which ample light is diffused. In accordance with Byzantine tradition, the capitals of these eight pillars, which are of Auchenheath stone, along with two corresponding corbels above the presbytery, have been carved, each showing an emblem of one of the Evangelists or Apostles. The north, or principal, tower rises to a height of 110ft. The new church is seated for 800 persons, exclusive of the choir.

GLASGOW.—At St. Bride's Episcopal Church, Hyndland-road, Glasgow, a scheme of reconstruction has been carried out, involving practically the rebuilding of the church, and the consecration took place on Monday. A new tower rises from Hyndland-road at the north-west corner of the north aisle to a height of 97ft. The stage of the tower below the church floor is utilised as a churchwarden's room, and a stone turret-stair connects this with the church, and continues up to the bell-ringing chamber. The second stage of the tower forms a portion of the church. The Lady-chapel is entered by a low pointed arch, and a further angled doorway leads to the turret stair in the tower. A memorial chapel has been built on the north side of the Lady-chapel, and contains a deep recess in the thickness of the wall for a recumbent figure. The staging for the choir seats in the chancel shows oak stalls raised one behind the other. The architect is Mr. H. O. Tarbolton, F.R.I.B.A., Edinburgh.

NANTWICH.—The architect of the Cheshire County Council has prepared plans of the new dairy farm and institute which is to be built on Henhall Hall Farm, Nantwich. The plans provide for the erection of a dairy block for cheese and butter making, with all modern equipment; an education block, providing a science laboratory, lecture-room, museum, a hostel for the accommodation of thirty-two students, and a block comprising laundry boiler and dynamo house. The dimensions of the cheese-separator room are to be 20ft. by 18ft., butter-making room 36ft. by 20ft., cream-ripening room (with ice-chest) 12ft. by 12ft., Stilton cheese-room 18ft. by 14ft., soft cheese-room 19ft. by 15ft., press-room 21ft. by 20ft., cheese-ripening room (cellar) 25ft. by 19ft., and cheese storeroom (first floor) 44ft. by 19ft. There are also shown on the plans various workrooms and offices. The main aspect for the dairy block faces north, and the plans have been prepared after inspection of various dairy institutes in different parts of the country. The estimated total cost of the new buildings will be approximately £25,688. Towards this sum the Board of Agriculture has promised a substantial sum.

SHIRLEY, SOUTHAMPTON.—The new Baptist church in Church-street, Shirley, was opened on Wednesday week. The edifice, which has accommodation for 670, is built in the Late Gothic style, in red brick and Bath stone dressings, and the plan is that of a Latin cross. Beneath the rostrum a baptistery is provided. There are vestries for the pastor, deacons, and ladies, and also an organ chamber. The interior woodwork is of pitchpine. A gallery is provided at the back, and others may be added in the tran-

septs when necessary. To the right of the main entrance is an embattled tower, rising nearly to the height of the end gable, and carrying a dwarf shingled spirelet. The architect is Mr. Norman T. Myers, A.R.I.B.A., of King-street, Cheapside, E.C., and Hills-road, Cambridge.

COMPETITIONS.

BOARD OF TRADE NEW OFFICES.—

The decision in this competition was made known last night. The selected design is that by Mr. E. Vincent Harris, F.R.I.B.A., 8, New-square, Lincoln's Inn. The erection of the building is to be postponed for the present. The designs will be on view at York House, Kingsway, W.C., from the 8th to the 22nd inst. The following is the list of the ten competitors, which almost exactly corresponds with that which we gave ten months ago (April 10, 1914), after the selection was made by the assessors, Sir Aston Webb, R.A.; Mr. Reginald Blomfield, R.A.; and Mr. Ernest Newton, A.R.A., P.R.I.B.A. The names appear here in alphabetical order: Messrs. H. Percy Adams, F.R.I.B.A., and C. H. Holden, A.R.I.B.A., London; Messrs. H. V. Ashley, F.R.I.B.A., and F. Winton Newman, F.R.I.B.A., London; Mr. C. T. Armstrong, A.R.I.B.A., London; Messrs. Robert Atkinson, A.R.I.B.A., and George L. Alexander, A.R.I.B.A., London; Messrs. H. T. Buckland, F.R.I.B.A., and Edward Haywood - Farmer, F.R.I.B.A., Birmingham; Mr. Edwin Cooper, F.R.I.B.A., London; Messrs. Charles Gascoyne and George Nott, A.R.I.B.A., London; Mr. E. Vincent Harris, F.R.I.B.A., London; Messrs. Alick G. Horsnell and Annesley H. Brownrigg, A.R.I.B.A., London; and Messrs. Percy E. Thomas, Ernest Prestwich, and Ivor Jones, A.R.I.B.A., Cardiff.

DUNDALK.—Professor W. A. Scott, A.R.H.A., of Dublin, has been appointed to adjudicate on the competitive plans to be invited by the Louth County Council for their proposed new offices in Crowe-street, Dundalk.

STEPNEY.—At the meeting on Wednesday, the Stepney Borough Council approved a draft advertisement inviting designs for a competition in connection with the new municipal buildings in Arbour-square. The accommodation in the new buildings will include a council chamber, six committee-rooms, mayor's parlour, etc., and office accommodation for the staff. Mr. Henry T. Hare has been appointed to act as assessor of the designs. Prizes of £100, £75, and £50 will be offered for the first three. If a building contract is not entered into within twelve months, the architect whose design is selected will receive £300 on account, and if the building scheme is abandoned or indefinitely postponed a further £300 in full discharge. The draft advertisement says "a lavish use of ornament is deprecated" and "the council do not desire the provision of a tower."

YORK.—The assessor has made his award in the St. Clement's Working Men's Club Competition, York, and has given the first position to Mr. Robert J. McBeath, M.S.A., Birnam House, Sale, Manchester. He did not mention any name for the second position, as there were many of equal merit.

At the annual meeting of the Belfast Builders' Association the following office-bearers were elected: President, Mr. R. B. Henry, J.P.; vice-president, Mr. W. H. McLaughlin, D.L.; hon. treasurer, Mr. J. O. Campbell, B.A., B.E.; committee, Messrs. William Laverty, Henry Martin, J. Courtney, W. J. Stewart, John Smith, James Lees, J. Miskimmin, S. B. Thompson.

All who know of the splendid work which has been carried on at the First Atelier of Architecture, Wells-mews, W., by Monsieur J. P. Chaires, the energetic sous-patron, will regret to hear that he has been somewhat severely wounded in both thighs, and is at present lying in the hospital at Mende, from whence he writes cheerily and hopefully of the ultimate certainty of the success of the Allied Forces. Sympathy and good wishes will go out to M. Chaires from his numerous English friends.

PROFESSIONAL AND TRADE SOCIETIES.

THE CHURCH OF HOLYROOD ABBEY.—The second part of a lecture on "The History of the Building of a Great Mediæval Church" was delivered on Thursday evening in the Edinburgh College of Art by Mr. Jno. Watson, F.R.I.B.A. We summarised the first portion of his address in our last number, p. 144. Mr. Watson now referred to the new plan of Holyrood Abbey devised by Abbot John as being a great improvement on that originally intended. The nave was widened, but within the limits of the old foundations, also, a significant change was made in the design of the western façade by boldly projecting the western towers and extending these clear of the aisles. The original design of the centre gable was shown and explained. The evolution of the pier arcade from a Romanesque motif and the method of designing the vaults which ceiled the nave and aisles were described. In Holyrood, as in all other churches of the first rank, the bay design was tripartite, and that here, in determining the heights of the various stages, a system of proportioning was adopted in accordance with structural necessities. As an explanation of the slow progress in carrying out the design in certain parts, Mr. Watson suggested that the Abbots devoted their energies to pushing on the completion of what was particularly their own part of the structure. A series of explanatory lantern-slides were shown, illustrating the features of the buildings.

EDINBURGH, LEITH, AND DISTRICT BUILDING TRADES' ASSOCIATION.—

The forty-third annual meeting of this association was held at 123, George-street, Edinburgh, on Friday night, ex-Bailie Forrest presiding. The report of the executive committee stated that prospects of material improvement in the building trade which were evidenced in the first half of the year were blighted by the outbreak of war. The immediate requirements of the Government had up till now staved off serious depression. It was inevitable, however, that the building trade, in common with others, would pass through a trying period while the war lasted. No one could predict its extent or what the future effect would be. Reports were made as to the negotiations for the establishment of conditions of contract and modes of measurement for joiner and mason work. The conditions of contract and the mode for joiner work, it is confidently expected, will be issued on March 1, and the mason mode will shortly follow. Questions affecting the enlistment of apprentices, agreements with merchants, and organisation were considered by the meeting. Office-bearers for the ensuing year were elected as follows: President, Mr. Edward Bruce; vice-presidents, Messrs. James Crowe, David A. Angus, and John Kennedy. An executive committee of seventeen members was also elected.

GREEK SCULPTURE.—In his introductory lecture on "Greek Sculpture," delivered on Monday afternoon at the Royal Academy, Sir Charles Waldstein treated upon the nature and aims of the art of sculpture. Art, he said, was an essential to life, and his aim in these lectures on Greek sculpture would be to spur them on to think. He wished them to think of their art, its origin, and nature. He insisted upon the essential value of individual expression on the one hand, and of the foolishness, on the other hand, of an artificial antagonism to traditional canons. There was a fashion and vogue of the childlike which was childish. Art had not, as was often asserted, imitation for its origin. It had its beginnings in the sense that led to the selection of the symmetrical. He inquired how it was that Greek art had remained so persistently the foundation of taste? He held that it was due to the fusion in that art of Naturalism and Idealism.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.—A general meeting of the above society was held at the Leeds Institute, Cookridge-street, on Thursday

evening last, January 28. The president (Mr. G. Fredk. Bowman) occupied the chair, and Mr. Thos. T. Thornton (president of the Leeds Photographic Society) gave a lantern lecture on "The Story of Fountains Abbey." The lecturer traced the history of the abbey from the beginning of its building in the year 1132, and told of the hardships which beset the Cistercian monks in the task of completing such a large undertaking. They found labour difficult to obtain and building material scarce, the stone being finally obtained from Pateley Bridge. These monks possessed as they were with a fine spirit and determination, toiled through the years to the glory of God, towards the completion of these "poems in stone," which are now the admiration of the civilised world. Mr. Thornton gave a good description of the life of the monk, and explained that although the monk always lived very well, he was in no way a gourmand. The lecture, being free from technicality, was highly appreciated by the members present, and a vote of thanks was proposed by the vice-president, Mr. F. F. Walsh, F.S.I., seconded by Mr. Willetts, and heartily adopted.

NINETEENTH-CENTURY MEANNESS.

—Lecturing at Birmingham University on Friday, on "Town Planning and Civic Design," Mr. Barry Parker, F.R.I.B.A., of Hampstead and Letchworth, said Aristotle had said "a city is a place where men live a common life for a noble end," and that it was the want of nobility in the aims and life of the 19th century which resulted in the low level of all its art—the individualism, the lack of civic spirit. A village had been a real community, led by the squire and the parson, with its doctor and smith, its shop-keeper and farmers, all taking their allotted place in it and forming part of an organised community, and the village was a visible expression of this, and so had unity and homogeneity. But when all this gave place to the "every - man - for - himself - and - the - devil - take - the - hindmost" idea of the 19th century, with the one relationship of employer to employed standing out beyond all others, there being nothing but meanness to express, mean was the expression. The hope for the future was that democratic ideas would build up a state of society based on relationships between its members which, having something noble in them, might be nobly expressed.

ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

—An ordinary meeting of the council of the above body was held at the Institute rooms, 31, South Frederick-street, Dublin, on Monday, Feb. 1. The president, Mr. R. Caulfield Orpen, B.A., R.H.A., was in the chair, and there were also present: Messrs. G. P. Sheridan, G. L. O'Connor, W. A. Scott, L. O'Callaghan, F. Hayes, J. H. Webb, A. E. Murray, C. A. Owen, A. C. G. Millarm, H. Allberry, and F. G. Hicks, hon. secretary. The minutes of the ordinary meeting of January 11 were read and signed. It was decided to hold an examination for admission of students in April next. A new committee was formed, called "Ancient Buildings Committee," consisting of Messrs. L. O'Callaghan, W. A. Scott, G. P. Sheridan, P. J. Lynch, and Dr. Cochrane, with the object of keeping records of ancient buildings of architectural or historical interest in Ireland. The president announced that the sum of one hundred guineas had been subscribed by the institute and the Architectural Association of Ireland to the special fund inaugurated by the R.I.B.A. to meet cases of distress among architects arising out of the war. Correspondence and other business having been transacted, the meeting concluded.

ROYAL TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMEN'S SOCIETY, GLASGOW.

—A meeting of the Glasgow Royal Technical College Architectural Craftsmen's Society was held in the college on Friday, Jan. 29, when Mr. Jas. Telfer gave a lecture on "Lighting." Starting with a short history of his subject, the lecturer sketched its progress to the present time. The methods of light-production by means of coal gas, electricity, and acetylene gas were explained. Mr. Telfer then com-

pared these types of lighting for a small country house, due regard being given to cost of installation, maintenance, and durability. Petrol-gas was held to be one of the most efficient systems of lighting for this class of house. A discussion followed.

SOCIETY OF ENGINEERS.—The following premiums in connection with the Society of Engineers (Incorporated), the new president of which is Mr. Norman Scorgie, have just been presented: The President's Gold Medal to Mr. A. S. E. Ackermann, for his paper on "The Utilisation of Solar Energy." The Bessemer Premium, value £5 5s., to Mr. A. Stewart Buckle for his paper on "Cylinder Bridge Foundations in the East, and the Construction of the Sittang River Bridge, Burma Railways." The premium, value £3 3s., for members of affiliated societies, to Mr. R. H. Cunningham, for his paper on "Irrigation in India." A Society's Premium, value £2 2s., to Mr. James Tonge, for his paper on "Some Uses of the Hydraulic Mining Cartridge."

ULSTER SOCIETY OF ARCHITECTS.—The annual meeting of this society was held at 9, Howard-street, Belfast, on Monday afternoon, the 25th ult. The chair was occupied by the president, Mr. N. Fitzsimons, and there was a large attendance of members, amongst others being Messrs. Robinson, R. M. Young, W. C. Maxwell, T. Houston, H. Seaver, F. H. Tulloch, W. J. Gilliland, and T. W. Henry, hon. secretary. The annual report of the council for 1914 was submitted by the hon. secretary. It showed that the latter half of 1914 had been a very quiet time for the profession. The roll of membership stood the same as last year, with the addition of one Associate. The Belfast Builders' Association requested the council to waive the condition that priced bills of quantities should accompany tenders; but the council, after carefully considering the matter, could not see its way to accede to the request, and considered that members, in the interest of their clients, should insist on this condition being complied with. The council had been throughout the year in correspondence with the R.I.B.A. regarding the recently formed School of Architecture at the Belfast Technical Institute, with a view to having the school approved by the Board of Architectural Education for the preparation of students for the Institute examinations. The Board deputed Mr. Paul Waterhouse, M.A., to visit and report on the school and its work. Mr. Waterhouse visited Belfast on November 26, and, together with the members of the council, made an official inspection of the school. Following on his report, the school has now been recognised by the Board of Architectural Education as one of its approved schools, and its name has been added to the list in the Kalendarr of the R.I.B.A. This should prove of inestimable value to students preparing for the Institute Examinations. The statement of accounts showed that the affairs of the society were in a sound financial condition. On the motion of Mr. Young, seconded by Mr. Houston, the report was adopted. The hon. treasurer (Mr. H. Seaver) submitted the financial statement for 1914, which was unanimously adopted, on the motion of Mr. Tulloch, seconded by Mr. Maxwell. Messrs. Tulloch, Houston, and Maxwell were appointed scrutineers, and the ballot then took place for the officers and council for 1915. The president declared the following elected as officers and council for the ensuing session: President, Mr. N. Fitzsimons, F.R.I.B.A.; vice president, Mr. R. E. Buchanan; hon. treasurer, Mr. H. Seaver, B.E.; hon. secretary, Mr. T. W. Henry, M.S.A.; members of council, Messrs. R. M. Young, F.R.I.B.A.; W. J. Gilliland, F.R.I.B.A.; T. Houston, J. J. McDonnell, J.P.; and G. Sands; associate members of council, Messrs. R. M. Close and H. Lamont; hon. auditors, Messrs. F. H. Tulloch and J. A. Hanna. A resolution was passed unanimously, on the motion of Mr. H. Seaver, seconded by Mr. R. M. Young, that the annual subscriptions to the society be remitted during 1915, on account of the war. Mr. W. J. Gilliland proposed, Mr. F.

H. Tulloch seconded, and it was passed unanimously, that By-law section 2, No. 4, which reads, "Students shall be not less than sixteen years of age, and engaged in the study of architecture under articles (having a period of at least three years) in the office of an architect who is a member of this or other society in alliance with the R.I.B.A.," shall be altered to read: "Students shall be not less than sixteen years of age, who are engaged in the study of architecture under articles (having a period of at least three years) in the office of an architect who is a member of this or other society in alliance with the R.I.B.A., or who have been registered as Probationers of the R.I.B.A." The proposal of the council of the society to present prizes to the architectural school of the Belfast Technical Institute for competition among students of architecture was discussed, and it was resolved, on the motion of Mr. Tulloch, seconded by Mr. Robinson, that the society offer prizes to be competed for by students of architecture only at the Technical Institute, and that the arrangements be left in the hands of the council.

Correspondence.

UNHEALTHY SCHOOLS.

To the Editor of the BUILDING NEWS.

SIR,—I concur, conditionally, with Mr. D. Wynne-Thomas that it is beneficial to breathe cold air. For example, what could be more exhilarating and bracing than a sharp walk for an hour or so on, say, a Yorkshire moor on a fine frosty morning, provided one is warmly clothed and keeps moving? If, however, one were insufficiently clothed and sat or stood about for that time, what would the result be? A bad chill, most likely, if nothing worse, and a general feeling of discomfort—Nature's warning.

Now, as in school the children do not wear their outside wraps, they must sit only partially clothed for hours at a time, exposed, with cross-ventilation, to a through-draught of cold air passing over their insufficiently-protected bodies. The baneful effects of this cold draught are intensified in the winter, when the lower parts of the classrooms are highly heated, as is seemingly required with cross-ventilation, the children being then subjected at one and the same time to considerable heat and cold currents; or, to put it broadly, baked from below and frozen from above—a very dangerous conjunction, as every medical man and physiologist knows. Indeed, of all the many impracticable schemes of ventilation that have been devised, cross-ventilation would appear to be the most impossible, as it not only fails to fulfil the purpose for which it is employed—viz., to secure the health and comfort of the children—but is a positive danger and a menace to health.

Mr. Thomas asks, if cross-ventilation is a curse and a failure, what other methods can be recommended that are not a curse? I would say that any other method might be better, and certainly could not be worse.

Mr. Thomas also says: "It is contrary to the laws of Nature that the temperature at head-level should be higher than that at foot-level." Now, instead of this being the case it is in strict accordance with the laws of Nature for warm air to ascend, and in an unoccupied room the air will always be found warmer at the higher levels than at foot-level, particularly when no provision is made to withdraw the heated air from the upper parts, which should be done, if the vitiated air is to be effectually got rid of. There is no other practical way, and a more equable temperature throughout the room would thus be secured. The more we conform to the laws of Nature in these matters, instead of, as with cross-ventilation, opposing them, the nearer we will be to the perfect plan—Nature's plan.

I would draw Mr. Thomas's attention to the following extracts from your article on "Unhealthy Schools" which deal with the points referred to by him:—

"Fresh-air-at-any-price enthusiasts" have certainly a good deal to answer for, the toll exacted, in the form of illness and discomfort arising from draughts, being a heavy one. In their contention that cold air 'hardens' one, and is, therefore, beneficial, they make the fundamental mistake of confounding the bracing cold air of outdoors with cold draughts indoors—two very opposite things . . .

"The old saying: 'When the wind's in the East it's neither good for man nor beast,' doubly applies in this case, when the biting winter blast, not 'tempered to the shorn lamb,' blows through heated classrooms in icy cross-currents, from which there is no escape, and which might make even the 'hardened' enthusiast, if subjected to them, admit that it was possible to have 'too much of a good thing'—even fresh air—and that so chilly a draught was literally, 'an ill wind that blows nobody good.' [What about the medical profession?]

"To subject young and delicate children for hours together, in the depths of winter, to a continuous down-draught from cross-currents of icy-cold air from window openings, with all the misery and suffering entailed, is a regrettable misconception on the part of those responsible, of the first duty of their trust—the welfare of the children; they 'sow the wind,' but the helpless little ones 'reap the whirlwind.'"

It is satisfactory to note that steps are being taken to bring the question before Parliament, as it is high time something was done to enlighten school managers in respect to the dangers and inhumanity of cross-ventilation, which, instead of being a benefit to the children, as intended, is actually inimical to both their health and their happiness.—I am, etc.,

HUMANITARIAN.

The urban district council of Aylesbury have appointed Mr. H. G. Cordon as surveyor.

The partnership hitherto subsisting between F. A. Hull and A. H. Collett, builders, at North-parade, Oxford, under the style of Hull and Collett, has been dissolved.

The corporation of Pontefract have approved a sewerage scheme prepared by Messrs. D. Balfour and Son, of Newcastle-on-Tyne, and have decided to make application for a loan of £25,000 to carry out the work.

The sum to be assigned by the Government for the erection of a national memorial in London to the late Earl Roberts will amount to £5,000, and it is probable that the commission will be entrusted to one sculptor to submit designs. The site has not yet been selected.

The executive committee of the Welsh War Hospital at Netley have decided to add 100 beds to the existing accommodation. The additional buildings designed by Messrs. Edwin T. Hall and E. Stanley Hall, of Bedford-square, W.C., hon. architects of the hospital—will be started at once.

At Monday's meeting of Evesham Rural District Council the chairman said the Offenham housing scheme had been completed at £15 or £16 below the estimated cost. The clerk said this was after £100 was spent on extras. Mr. Holloway, the surveyor, said, as far as he could see, there would be a saving on all the council's housing schemes.

The rural district council of Chapel-en-le-Frith have under consideration a scheme for the construction of a new road from Whaley Bridge to Bugsworth, at an estimated cost of £7,000. In this scheme, which has been prepared by the engineers, Messrs. Brady and Partington, Chapel-en-le-Frith, and Mr. E. J. Hunter, the council's surveyor, bridges will be required over the Great Central Railway Canal and the River Goyt.

Dispensary buildings added to the Children's Hospital in Temple-street, Dublin, were formally opened on Tuesday. The additions include a waiting-hall 36ft. by 30ft. with seating accommodation. Off this hall, on either side, are an operating-theatre, reclining-room, eye and ear consulting-room, dental- and dressing-room. These apartments are about 14ft. by 12ft. There are also a doctor's room, pharmacy, and pathological room. Messrs. W. H. Byrne and Son, of Suffolk-street, Dublin, were the architects, and Mr. M. J. Greene, of Donnybrook, was the builder.

Our Illustrations.

THE CHURCH OF THE HOLY ANGELS, HOAR CROSS, BURTON-ON-TRENT: TOMB TO THE LATE HUGO MEYNELL-INGRAM.

The illustration which we give to-day includes a view of the recumbent effigy tomb erected to the memory of the late Hugo Meynell-Ingram, in the beautiful Church of the Holy Angels, Hoar Cross, near Burton-on-Trent. The tomb is in the chancel, and is made of white statuary marble and black, with the coat-of-arms all in colour. The surroundings and the figure work over the arch is all built in red Redcorn stone. The memorial was designed by Messrs. Bodley and Garner, the architects of the building which stands in the park. Since the death of G. F. Bodley, R.A., his partner, Mr. Cecil G. Hare, has extended the church, added to its equipment, and designed the mural monument now completed to the memory of Mr. Bodley in the same building. We are indebted to Mr. Cecil G. Hare, Mr. Bodley's partner and successor, for permission to publish this illustration.

FLORENCE NIGHTINGALE STATUE, WATERLOO PLACE, S.W.

The plan attached to this photograph of Mr. Arthur G. Walker's bronze statue of Miss Florence Nightingale, just erected in Waterloo-place in connection with the Crimean Monument, shows how the new grouping has been arranged. The well-known figure, designed by John Bell, the sculptor, has been re-erected on a site about 80ft. north of the spot where it has stood so long, and where now the new statue, which we illustrate to-day, and the statue of Sidney Herbert (Lord Herbert of Lea), by Foley (1867), are to be set 9ft. apart, and so will form a symmetrical grouping with the Guards' memorial, the plan being based on a triangular lay-out, in a line with Pall Mall. Miss Florence Nightingale's statue is placed to the west, and Lord Herbert of Lea's will stand towards the east. This figure has occupied for 48 years a prominent position in the quadrangle of the War Office. The work of altering the position and reinstating the Crimean Monument has been carried out by Messrs. Holloway Bros., Ltd., under the direction of H.M. Office of Works. Mr. T. R. Fitch being the foreman in charge. Queen Alexandra will unveil the statue of Miss Nightingale very shortly.

EYFORD COURT, GLOUCESTER- SHIRE.

This commodious and characteristic country house in the Cotswolds, which has been erected from the designs of Mr. E. Guy Dawber, F.R.I.B.A., is built of stone, with ashlar dressings, cornices, and chimneys; stone slates cover the roofs. Messrs. Walker and Slater, of Derby, were the builders. Before the house was well on the way we gave a perspective from the Royal Academy (June 2, 1911), showing a different view of the house to either of the photographs reproduced to-day, and we have illustrated two sheets of working drawings of the hall and staircase, as well as details of the south elevation, in our issues for April 4 and September 5, 1913. The accompanying photographs were taken by the clerk of the works and lent us by the architect. A plan appeared when the perspective above referred to was published. The gardens have now been completed, and more or less grown up as a setting to the building, with its terrace, forecourt, and gazebo overlooking the grounds.

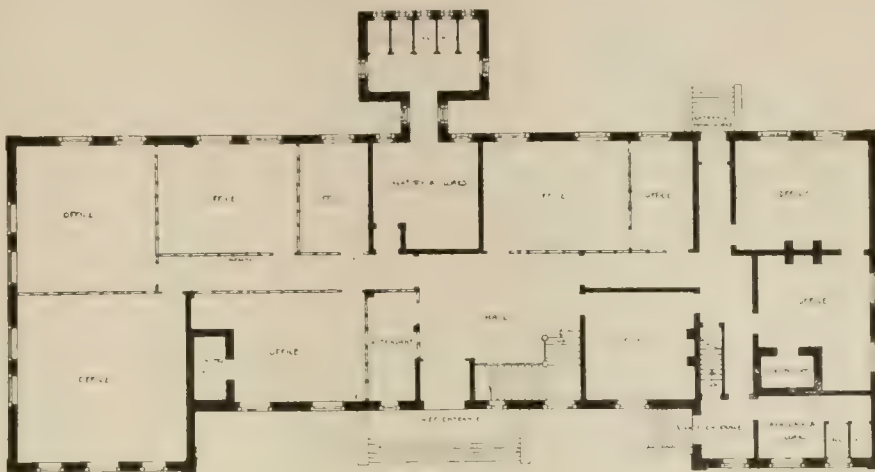
THE GLYNN VIVIAN ART GALLERY, SWANSEA.

This building, of which we reproduce a new plan, was presented to the town of Swansea by the late Mr. Glynn Vivian, and it was built at a cost of £10,000. The Art Gallery is approached by a wide flight of steps to the ground floor, which is elevated above the pavement about 5ft. The

large central hall is 63ft. long, and extends through the full height of the two floors, and has wide galleries on the first-floor level, which is approached by a good wide stone-and-marble staircase. On the ground floor is a large picture gallery, immediately behind the central hall, divided in the centre by a screen, and lighted by a lantern-light running the whole length of the roof. On this floor are also three other spacious rooms devoted to works of art. The curator's room and art students' room occur

PATHHEAD SCHOOLS, KIRKCALDY. (SELECTED DESIGN.)

The Pathhead School, now illustrated, is practically completed, and is already occupied. It has accommodation for 400 infants, 325 boys, and 325 girls—a total of 1,050 pupils. There is also a sewing-room provided, and a large central hall. Each classroom has direct "through" ventilation. The school is built of brickwork with stone dressings, the brickwork being roughcast in



GROUND FLOOR PLAN.

PORT TALBOT STEEL COMPANY, LTD., NEW OFFICES, SOUTH WALES.

Mr. GLENDINNING MOXHAM, F.R.I.B.A., Architect.

near the entrance. On the first floor a series of rooms are planned for the various sections of the donor's collections of china, miniatures, engravings, pictures, etc. Accommodation is provided for a caretaker, and all the necessary adjuncts essential to a building of this class. The woodwork is of selected oak. The façade is built of thin red local bricks and stone ashlarings. The contractors were Messrs. Lloyd Bros., of Swansea, and the architect is Mr. Glendinning Moxham, F.R.I.B.A., of Swansea.

THE LONDON AND PROVINCIAL BANK, SWANSEA.

The new premises for the London and Provincial Bank, Swansea, which we illustrate to-day, have been built on the site of the old Cambrian Newspaper Offices, and consequently occupy an important position in Wind-street. The façade up to the first floor is built of blue pearl granite, and above that it is faced with Portland stone. On the ground floor is a large banking chamber with accommodation for forty-five clerks, with manager's room, waiting-room, clerks' lunch-rooms, etc. The woodwork throughout is of selected oak. The basement is occupied with muniment and strong-room. Suites of offices are provided on the first and second floors. All the floors are constructed of iron and concrete. The architect is Mr. Glendinning Moxham, F.R.I.B.A., of Swansea.

NEW OFFICES, PORT TALBOT.

This new block of buildings for the Port Talbot Steel Co., Ltd., is situated on a site adjoining the works, and has just been completed. The exterior is built of narrow red Graig bricks with Bath-stone dressings. The roofs are covered with brindle-colour tiles. The ventilating flèche is of oak covered with lead. The plan, of which we give a copy, has been arranged to meet the accommodation of a large staff of clerks. The various departments are divided with glass screens, so as to afford the chief clerk full supervision. The woodwork is chiefly of oak. The heating of the building generally is carried out by electric radiators, the power being obtained from the works. The building has been designed and carried out under Mr. Glendinning Moxham, F.R.I.B.A., architect, of Swansea.

cement. The Blairhill School, which we shall illustrate shortly, also for the Kirkcaldy Educational Authority, has been built. The architect for both schools is Mr. William Williamson, F.R.I.B.A., Kirkcaldy, whose plans were placed first and second in order of merit in each competition by Sir John James Burnet, A.R.S.A., who acted as assessor.

LLANSAMLET CHURCH TOWER.

This new tower now being built has been designed by Mr. Glendinning Moxham, F.R.I.B.A., architect, Swansea, and when finished will form a distinctive landmark for the surrounding country. The tower has been made in character with the existing church, and it will be 80ft. high, with a peal of bells, and an open-grid faced clock occurs on each face, as seen in our illustration. The contractor is Mr. J. Arnold, Clydach-on-Tawe, and the work will be completed by the beginning of May.

The Local Government Board have sanctioned the borrowing by the town council of £4,318 for the provision of workmen's houses.

Messrs. Swiney and Crossfield, M.I.C.E., Belfast, are preparing particulars and estimated cost of a water supply for the urban district council of Tandragee from the Portadown and Banbridge Water Board and from the Glenoran springs.

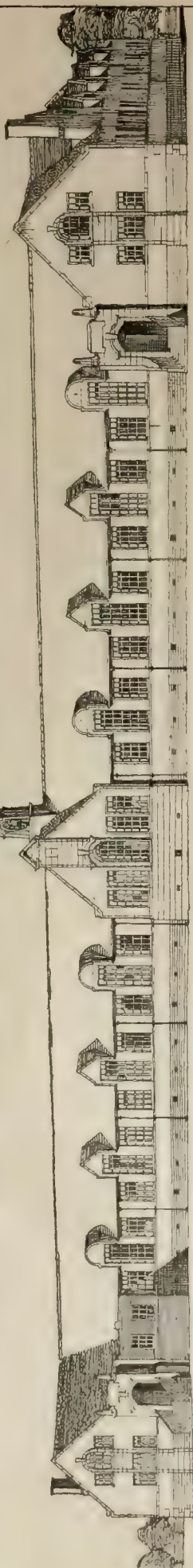
Mr. F. H. Tulloch, on behalf of the Local Government Board, has held an inquiry at the Manchester Town Hall into the application of the corporation for power to borrow £14,500 for work of private-street improvements in the Withington district.

Mr. P. C. Cowan, M.I.C.E., attended at the town-hall, Kingstown, Co. Dublin, on the 28th ult., and held an inquiry into the proposal of the urban district council to borrow £54,867 for building dwellings under the Housing of the Working Classes Act and £1,260 for widening Dunleary Hill.

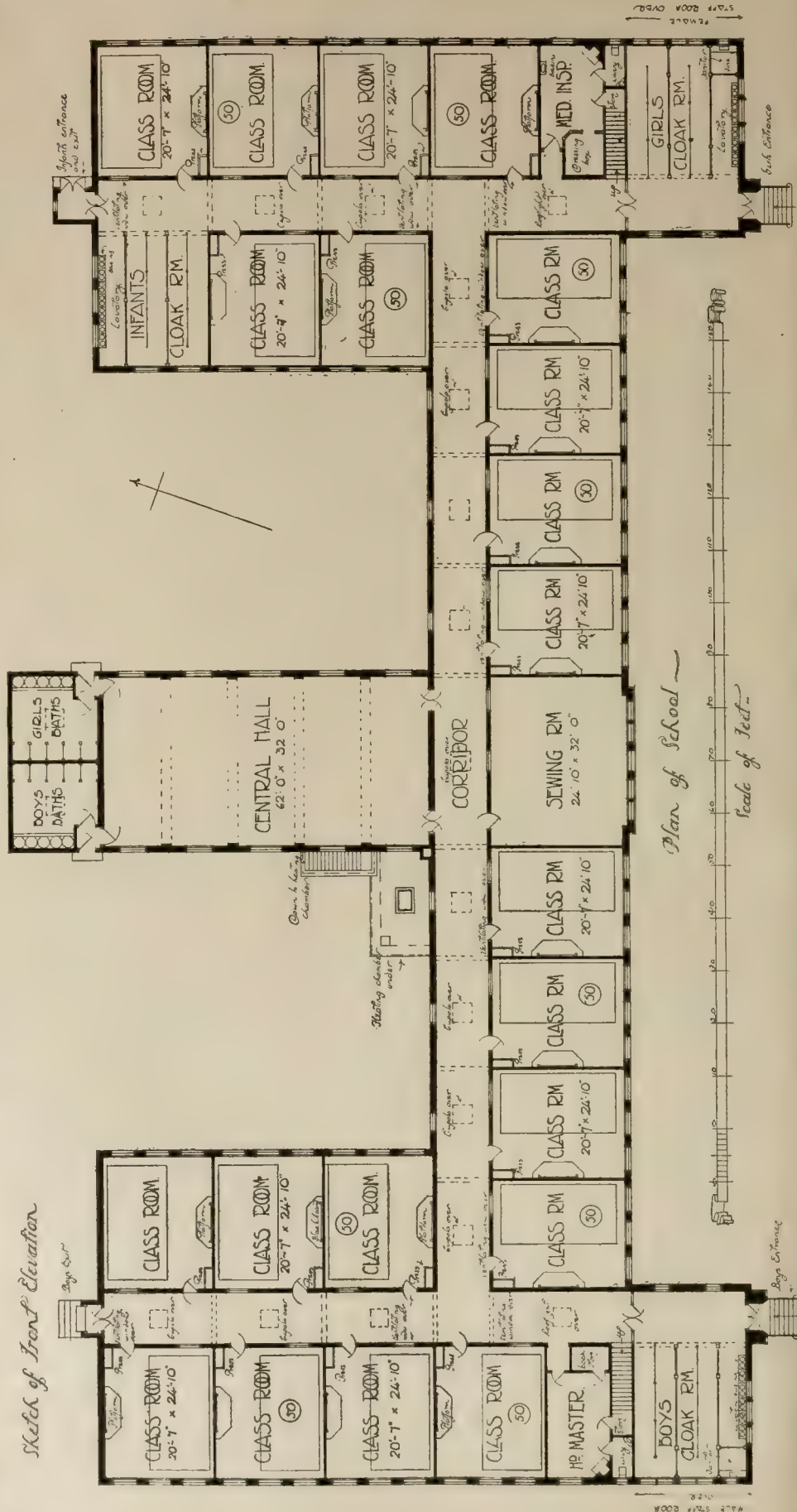
At a meeting of the River Wear Commission on Friday a report was presented by the works committee on the harbour-improvement work carried out at Sunderland during the past year. The result of the dredging operations had been that 607,239 tons of material had been removed, of which 8,722 tons were soft rock and vessels of 600ft. length with 80ft. beam could now pass up and down the river.

THE SCHOOL BOARD OF KIRKCALDY AND DYSART.

NEW SCHOOL AT PATHHEAD William Williams & J. A. G. Archt.



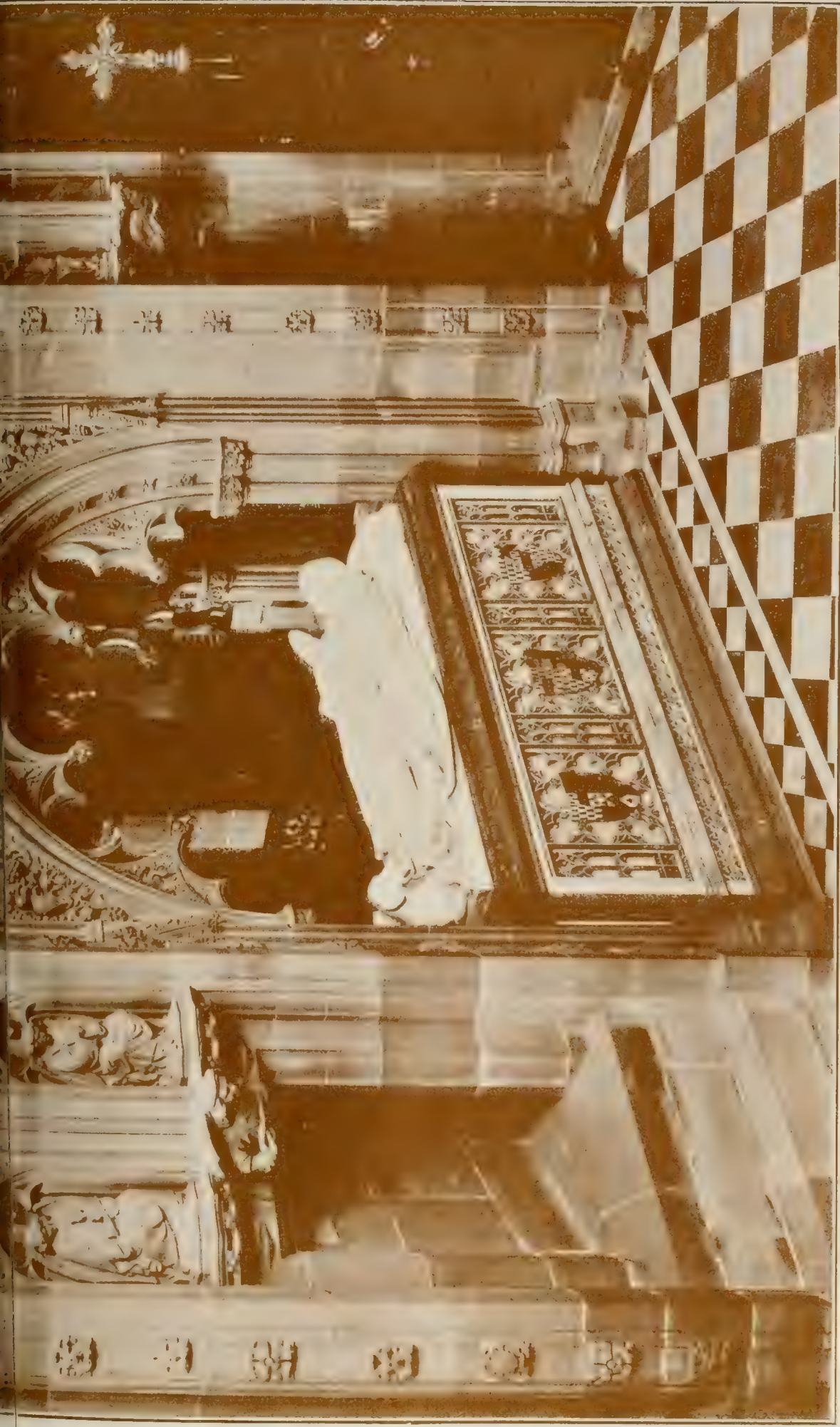
Sketch of front Elevation





THE BUILDING NEWS, FEBRUARY 5, 1915.





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CHURCH OF THE HOLY ANGELS, HOAR CROSS, NEAR BURTON-ON-TRENT: TOMB TO THE LATE HUGO MEYNELL-INGRAM.

Messrs. G. F. BODIEY, R.A., and THOMAS GARNER, Architects.





A. H. B. Photo.

THE FLORENCE NIGHTINGALE STATUE (CRIMEAN MONUMENT), WATERLOO PLACE, S.W.—Mr. ARTHUR G. WALKER, Sculptor.

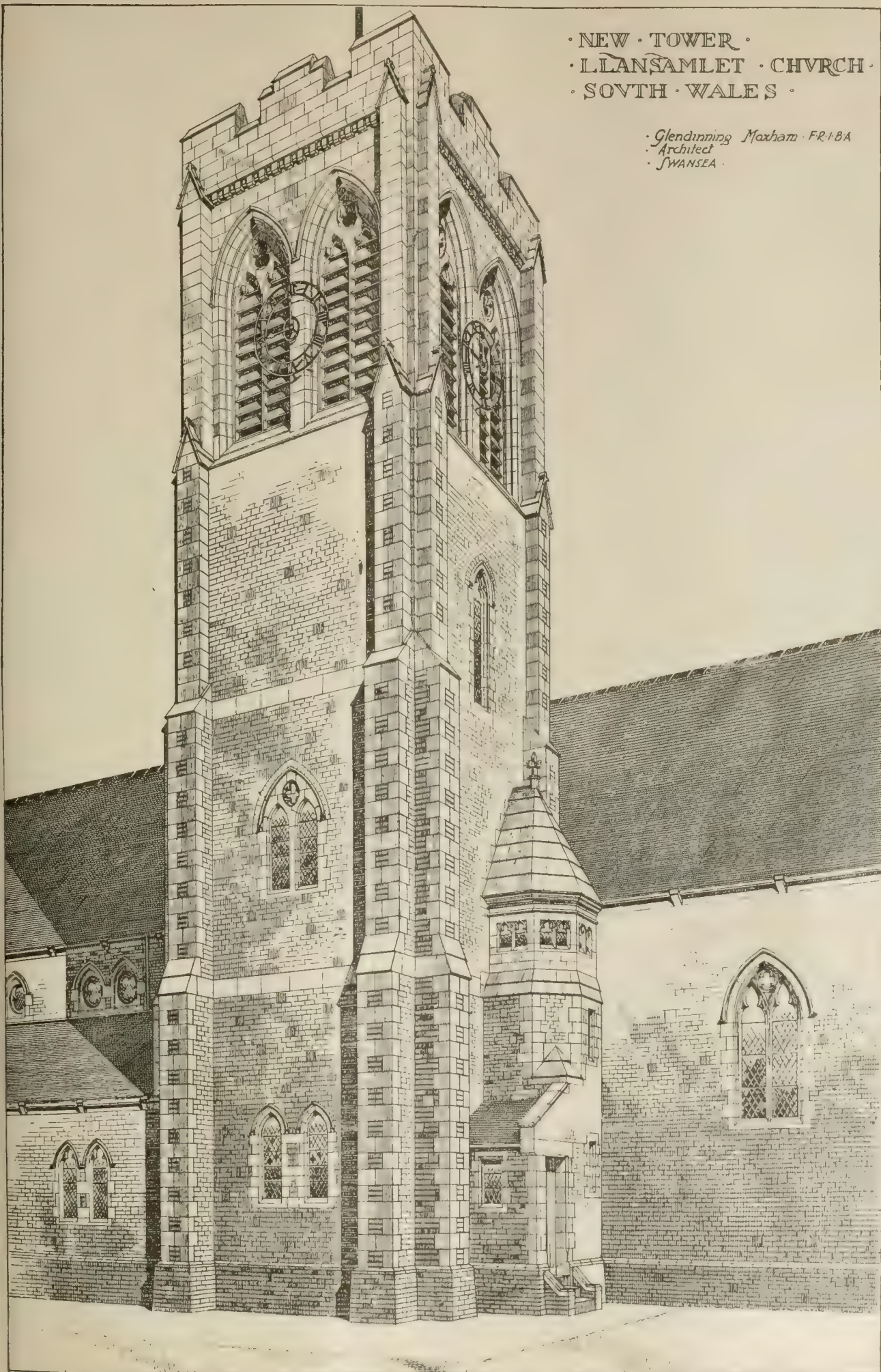


EYFORD COURT, GLOUCESTERSHIRE: SOUTH TERRACE FRONT AND FORECOURT FRONT.—Mr. E. GUY DAWBER, F.R.I.B.A., Architect.



· NEW · TOWER ·
· LLANSAMLET · CHVRCH ·
· SOUTH · WALES ·

· Glendinning Moxham · F.R.I.B.A.
· Architect ·
· SWANSEA ·



NEW TOWER, LLANSAMLET CHURCH, SOUTH WALES. MR. GLENDINNING MOXHAM, F.R.I.B.A., Architect.

LEGAL INTELLIGENCE.

SETTLEMENT OF ARCHITECT'S CLAIM.—A. H. Crawford v. Grand Lodge of Ancient Free and Accepted Masons of Scotland. A settlement has been effected in the action brought in the Scottish Outer House of Session, before Lord Dewar, by Alexander Hunter Crawford, sometime architect in Edinburgh, and now residing at 97, Ullet-road, Liverpool, against the Grand Lodge of Ancient Free and Accepted Masons of Scotland. In 1909 the pursuer was employed by the defenders to act as their architect in connection with the demolition of the then existing Freemasons' Hall at 96, George-street, Edinburgh, and the erection of new premises. For the work so done the defenders had paid £1,300 to account, and the pursuer claimed payment of the balance, amounting to about £600. He maintained that his charges were fair and reasonable, and such as were usually charged, and in accordance with the practice of his profession. If stated in accordance with the regulations of the Royal Institute of British Architects, his account would have been larger. The defenders denied liability for the sum sued for. They maintained that the account was overcharged, and said the pursuer was not entitled to 5 per cent. commission on the sum of £37,610—the rate, looking to the nature of the work, being excessive. They also contended that the pursuer was not entitled to commission on tradesmen's accounts for furnishings, etc. These accounts amounted to £5,971, and the commission, at 5 per cent., was £298 which, the defenders said, fell to be deducted from the pursuer's account. In a statement of facts for the defenders, a counterclaim for £550 was set forth in respect of alterations which they said had to be effected in regard to ventilation and the site of the motor and blower-fan for the organ. In his answers the pursuer said he was in no way responsible for the defects now complained of. On the completion of the work it was approved by the defenders, who took no objection of any kind to the character of the pursuer's work and services. They never suggested that they had any cause of complaint against the pursuer until the present action was raised. Proof had been partly led in the case. The defenders have tendered to the pursuer £561, with expenses to the date of tender, and offered to withdraw the counterclaim. This tender and withdrawal the pursuer has accepted, and the case has been taken out of court.

HIGHWAY RIGHTS AS AFFECTED BY SWINGING DOORS.—In the Manchester County Court, on Friday, Frederick Downes, insurance agent, of Sherrington-street, Longsight, sued Samuel Claff as owner, and W. Millward as occupier, of the Alexandra Picture Palace, Longsight, for £25 as damages for personal injuries alleged to have been due to the negligence of the defendants. On Aug. 24 last, as the plaintiff was riding his bicycle by the side of the picture palace, one of the folding exit-doors swung open, projecting over the foot-path by a foot or two, and knocked him from his machine. The door was apparently not secured, and had been blown open by the wind. Mr. Kuit raised several defences, and submitted that Mr. Claff could not be held liable, because the only persons responsible were the occupiers, who in this instance were Mr. Millward and several other persons. Judge Mellor, K.C., said that liability in such actions as this fell on the occupier, and the question of occupation was one of fact. As Millward was the occupier at the time of the accident, he was responsible for whatever trouble had arisen, because there was an admitted right of way along this side-road, and owners in such circumstances must see that there was nothing in the shape of a trap upon it. Assessing the damages at £15, he gave judgment for that amount, and costs, against Millward. As the name of the licensee was not changed when Millward became occupier of the palace, he refused to allow the defendant Claff any costs.

In the event of their Bill for this session receiving sanction, the expenditure to be incurred by the Metropolitan Water Board is estimated at £682,500, which will be spent on the construction of new reservoirs in Kent.

An inquiry was held at Redditch on Tuesday by Mr. H. R. Hooper, on behalf of the Local Government Board, in respect of an application by the Redditch Urban Council to borrow £28,000 for the purpose of the electricity undertaking.

The Liverpool Cathedral Committee announce that, after taking into account recent rises in wages and the cost of materials, further contributions to the extent of £44,466 will be necessary to complete that portion of the cathedral now in course of construction.

STATUES, MEMORIALS, &c.

KING EDWARD MEMORIAL.—At a cost of £600 per annum, the Corporation of London proposes to undertake the future upkeep and maintenance of Shadwell Park as a memorial to the late King Edward when it has been laid out as an open space by the memorial committee. The money will come out of the Corporation's private estate. The Shadwell Market site, which cost the corporation £140,000, was sold to the memorial committee a year ago for £70,000. For the moment the work of converting the site into a park is seriously hampered for want of funds.

CAPTAIN SCOTT MEMORIALS.—The Mansion House Committee of the Captain Scott Memorial Fund have entrusted the execution of the monument to Mr. Albert H. Hodge, whose model and design were selected recently after a limited competition. The monument and the pedestal will cost £7,500. The architectural portion is to be of grey granite. A site has been selected by the committee facing the Thames in the grounds of Greenwich Hospital. A bronze memorial tablet to be placed in St. Paul's Cathedral is being executed by Mr. S. Nicholson Babb.

STAINED GLASS.

WESTMINSTER ABBEY.—The Dean and Chapter of Westminster have had before them three designs for the proposed stained-glass window to be placed in the Abbey which have been submitted for consideration by the Strathcona Memorial Committee. A selection was made, and the Chapter Clerk has written to the hon. secretary of the committee informing him of the fact. The cost of the window is placed at £800. The late Lord Strathcona is described in the inscription as "Great Canadian, Imperialist, and Philanthropist."

East Ham Town Council have received the sanction of the Local Government Board to the borrowing of the sums of £4,028 and £3,359 for the provision of additional tanks and contact-beds at the sewage disposal works.

The Southport Town Council approved on Tuesday night an important scheme for securing a better avenue from Lord-street to the Promenade. It was decided to purchase certain properties for the purpose of widening Nevill-street, the main entrance to the front, at a cost of over £5,000.

The urban district council of Beckenham, Kent, have received from the Local Government Board sanction to borrow £1,090 for the improvement of St. George's-road, £350 for culverting a stream between Cromwell-road and Belmont-road, £165 for duplicating the culvert in Cedars-road, and £2,120 for widening and improving Hayes-lane and Upper Elmers End.

The urban district council of St. Ives, Cornwall, under the borough surveyor, Mr. Sidney Palmer, are now carrying out extensive road-widening and improvement works on the St. Ives—St. Just road, from just above the board school in the Stennack to the top of Trevalgan Hill. It is also intended to commence a new sea-wall and roadway at the harbour.

On Tuesday next, at 7.30 p.m., Dr. M. S. Pembrey, Lecturer on Physiology, Guy's Hospital, and late member of the Advisory Board, Army Medical Service, will open a discussion on "Tall v. Short Men for the Army" at the Royal Sanitary Institute, 90, Buckingham Palace-road, S.W. The chair will be taken by Surgeon-General Sir W. Launcelette Gubbins, K.C.B.

The opening address of a course of five lectures on "Belgian Art" was given yesterday (Thursday) afternoon in the Architectural Lecture Theatre, University College, Gower-street, W.C., by Monsieur Camille Poupeye, of Malines, Licencié en Art et Archéologie. The lectures are addressed to advanced students of the University and to others interested in the subject. Admission free, by ticket, to be obtained from the secretary, University College, Gower-street, W.C.

To the parish church of Glencolumbkille, Co. Donegal, a tower and spire have been added at the west end, at the cost of Mr. Henry Musgrave. The tower is three stories in height, is built of local stone, and has a stepped parapet. Behind this parapet rises a short square spire of reinforced concrete. Messrs. S. P. Close and Son, of Belfast, were the architects, and Messrs. James MacClay and Son, of Strabane, the builders. The clock (on the south face of the tower) and bell are by Messrs. Smith, Midland Works, Derby.

Our Office Table.

Mr. Frank Darling, of Toronto, who has been nominated by the Council of the Royal Institute of British Architects, under the provisions of By-law 70, for submission to his Majesty as a fit recipient for the Royal Gold Medal, is in partnership with Mr. John J. Pearson at 2, Leader-lane, Toronto. Among the recent works carried out by the firm are the Canadian Bank of Commerce at Vancouver, B.C., illustrated in our issue of Dec. 12, 1913; a new club-house for the Hunt at Toronto, given by us on Oct. 24 the same year; and a block of insurance offices in the same city, shown in our number for Sept. 12 of that year. All three drawings were exhibited at the Royal Academy the year before last. Both Messrs. Darling and Pearson are members of the Royal Institute of Architects of Canada, but neither has joined the R.I.B.A.

Highway authorities throughout the country are faced with an increasing shortage of granite for road-repairing. The borough engineer of Kensington has reported that for some time past he has been unable to secure a supply of Guernsey granite from the council's contractors, who recently pointed out that they had great difficulty in arranging delivery of sea-borne material. They asked the council to bear some portion of the additional expenditure incurred in executing the orders. The request was not at first entertained, as the council were able to obtain Leicestershire granite, which answered the purpose, at something less than the contract price. The borough engineer now states, however, that it is no longer possible to get a sufficient supply of stone from Leicestershire, owing to the use of the railway for War Office requirements. Granite is urgently required for road repairation works in the borough, and the committee dealing with the matter recommends the council to assent to the payment to the contractors of 1s. per ton in excess of the contract price.

In connection with the request from certain contractors to be allowed an increase in their contract rates consequent upon the outbreak of hostilities, the Stepney Borough Council approached the Local Government Board, who stated in reply that, in their view, the war does not affect the liability of contractors under contract with local authorities; but that there may be cases in which the circumstances of a particular contract would have to be considered, in order to determine the legal position. The Local Government Board suggest that local authorities should endeavour to arrange with contractors to continue to supply, "on the understanding that whilst the contracts will form a basis for arrangement as to the prices to be paid, the local authority will be willing in proper cases to settle the actual amounts at a subsequent date, either by agreement or by arbitration."

As an outcome of the report made by Principal Laurie of Edinburgh to the Board of Trade on certain of our chemical industries, a meeting was held in London on Friday with representatives of the Board of Trade, the Geological Survey, and the Board of Education, at which Principal Laurie was present. As a result of the meeting it has been decided that the Geological Survey will set apart part of their staff to investigate and report on certain of the mineral resources of this country, the minerals selected being those which are important in connection with chemical manufacture, and which in the past have largely been imported from Germany.

"The Sanitary Record and Municipal Engineering Year Book and Empire Directory of Municipal Officials for 1915" (5s. 4d., post free) is issued by the Sanitary Publishing Co., 55-56, Chancery-lane, W.C. The directory covers the whole British Empire. The scientific and technical data are brought well up to date, and the diary is a convenient and liberally-spaced one. This is the thirty-third annual issue of this

valuable work of reference, which is unique in its scope, and of great value to all interested in civil engineering and Local Government affairs.

"Sewage Purification and Disposal," by G. Bertram Kershaw, M.I.C.E. (Cambridge University Press, Fetter-lane, E.C., 12s.), is one of a series which the syndics of the Cambridge University Press are issuing, dealing with the subjects connected with public health. The author has been engineer to the Sewage Disposal Commission since its inception some sixteen years ago, and has well utilised his exceptional opportunities. Omitting details of methods as yet in the first stages of experiment, he gives a concise, but comprehensive, review of the whole subject, with a bibliography at the end of each chapter, guiding those needing it to fuller information on points regarding which they may be specially interested.

It has been decided to place on Octagon House, Washington, the headquarters of the American Institute of Architects, a tablet commemorating that in it, one hundred years ago, was ratified the Ghent treaty with Great Britain, from which has followed 100 years of peace with this country. Octagon House stands on Eighteenth-street and New York-avenue. It was erected in 1800 from designs by William Thornton, of Philadelphia. John Taylor commissioned him to plan a house fit for entertaining on a large scale, and the Octagon House followed as a result. President George Washington afterwards commissioned Thornton to design for him two buildings near the Capitol, to be used for an inn. When the British burned the White House, President Madison moved into the Octagon House, and for eighteen months it was the White House of the time. Then it was taken over by the Taylors again, and occupied by them until 1850. Its fate seemed settled when it became a tenement house for negroes; but the American Institute of Architects rescued the structure in 1899 by purchasing it and restoring it to its present appearance.

Mr. Walter Leaf, deputy chairman, presided at the annual ordinary general meeting of the London County and Westminster Bank, held last week. For the part played by the Government and the Bank of England throughout the crisis, he said, they could feel only the most sincere admiration and gratitude. The London and County might also claim that they took their fair share both of work and responsibility. The policy of the bank throughout was one of the broadest and most liberal considerations of the requirements of their customers and the legitimate demands of commerce. They made no use of the Moratorium against their depositors, and their current accounts were throughout conducted on the regular lines, and they were rewarded by the most indispensable of all supports—the unshaken confidence of the public. Instead of a run on the Friday when the banks reopened, after the four-days Bank Holiday, they observed an addition to the amount of current account balances. That grew steadily, till in November and December he had passed the aggregate of £100,000,000. The payments for the War Loan in December had slightly reduced, and in their balance-sheet now they showed only £99,000,000. This figure must be regarded as to some extent abnormal; but he would like to take the opportunity of pointing out how largely it was a result of the steady and natural growth of their business. At the time of the amalgamation of the County and Westminster Banks in 1909, their total current account and deposit balances, as shown in the balance sheet of December 31, 1909, amounted to £70,000,000. This grew as follows: Dec. 31, 1910, £76,000,000; 1911, 80 millions; 1912, 81 millions; 1913, 85 millions; and in June last 87 millions. They might, therefore, estimate their normal balances at this time at about 90 millions, and conclude that the abnormal growth owing to the war was not more than 10 per cent. In other words, they had added by steady and natural growth, without any amalgamation of other banks, 20 millions in

five years. He moved the adoption of the Report, which was seconded by Mr. C. S. Grenfell and unanimously agreed to. The retiring directors were re-elected and the auditors reappointed, and cordial votes of thanks to the chairman and directors and to the officers and staff of the bank were unanimously passed.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (TO-DAY).—Institution of Municipal and County Engineers. "Building By-laws and a Court of Appeal," by H. D. Searles Wood, F.R.I.B.A. 92, Victoria-street, S.W. 8 p.m.

MONDAY.—Royal Academy. "The Highest Period of Greek Sculpture," by Sir Charles Waldstein. 4 p.m.
Victoria and Albert Museum. "English Sculpture and Stained Glass Windows," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.
Surveyors' Institution. Adjourned Discussion on "Urban Land Tenure." 8 p.m.

TUESDAY.—Royal Sanitary Institute. Discussion on "Tall v. Short Men for the Army," to be opened by Dr. M. S. Pembrey, of Guy's Hospital, 90, Buckingham Palace-road, S.W. 7.30 p.m.
Institution of Civil Engineers. "Engineering Operations for the Prevention of Malaria," by F. Dudley Evans, A.M.I.C.E. 8 p.m.

WEDNESDAY.—Royal Academy. "The Decline of Greek Sculpture," by Sir Charles Waldstein. 4 p.m.
St. Paul's Ecclesiastical Society. "Durham Cathedral and Castle," by Rev. H. Bedford Pim, M.A. 8 p.m.
Royal Society of Arts. "British Lithography in 1915," by F. Vincent Brooks. 8 p.m.

THURSDAY.—British Museum. "Triumphal Arches of Rome," by Banister F. Fletcher. 4.30 p.m.
"Belgian Art," No. 2, by Camille Poupeye, of Malines. Architectural Lecture Theatre, University College, Gower-street, W.C. 5.30 p.m.
Society of Architects. "The Construction and Protection of Buildings in Relation to Fire Risks," by A. Alban H. Scott, Vice-President. 8 p.m.
Shethfield Society of Architects and Surveyors. "Architecture and Environment," by W. S. Purchon, M.A., A.R.I.B.A.

FRIDAY (FEB. 12).—Glasgow Architectural Craftsmen's Society. "The Science of Stone-cutting," by J. S. Boyd, L.R.I.B.A. 8 p.m.

SATURDAY (FEB. 13).—Institution of Municipal Engineers. Northern District Annual Meeting at the Town Hall, Newcastle-on-Tyne. 2.30 p.m. Annual Dinner at the Royal Turk's Head Hotel, Grey-street. 6 p.m.

The death is announced of Mr. E. J. Symes, architect and surveyor, of Chisle.

Wednesday Town Council formally approved, on Monday, plans for twenty-four artisans dwellings to be erected under the municipal housing scheme recently adopted by the council.

The Lanark Middle Ward Committee have authorised the water committee to purchase land on the Colebrook estate, at a cost of £18,750, for the construction of a reservoir at Camps.

At the next meeting of the corporation of Newcastle-on-Tyne the trade and commerce committee will recommend an extension of the quay south-east of the Ouseburn, at an estimated cost of £51,100. The work includes a quay-wall 330ft. in length.

After being in danger of losing its status as the place of worship of a separate parish, the Church of St. John the Evangelist, Grove-street, Commercial-road, E., has been given a new lease of life, and the building itself has been restored at the cost of £1,500. The Bishop of London rededicated the church on Tuesday night.

The City Corporation have signified their approval to the names Pepys street and Muscovy-street for the two new streets to be formed in connection with the site in Trinity-square of the offices for the Port of London Authority about to be built from Mr. Edwin Cooper's designs, recently selected in competition.

The London County and Westminster Bank, Ltd., announce that Mr. F. W. Blackwell, the manager of their Lombard-street office, will, after nearly forty-six years' service, retire on pension at the end of this month, and that the directors have appointed Mr. D. N. Youle, at present assistant manager, to succeed him in the management.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us. Timber quotations we omit altogether, as published figures differ so widely that they are, we fear, in many cases quite unreliable.

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£7 10 0 to	£8 0 0
Wrought-Iron Girder Plates	7 15 0 ..	10 0 0
Steel Girder Plates	8 0 0 ..	9 0 0
Bar Iron, good Staffs	6 5 0 ..	8 10 0
Do., Lowmoor, Flat, Round, or Square	22 0 0 ..	0 0 0
Do., Welsh	5 15 0 ..	5 17 0
Boiler Plates, Iron—		
South Staffs	8 0 0 ..	8 15 0
Best Snedshill	9 0 0 ..	9 10 0
Angles 10s., Tees 20s. per ton extra.		
Builders' Hoop Iron, for bonding, &c., £8 15s. to £9.		
Ditto galvanised, £14 to £15 10s. per ton.		

Galvanised Corrugated Sheet Iron—			
No. 18 to 20.		No. 22 to 24	
6ft. to 8ft. long, inclusive gauge	Per ton.	Per ton.	Per ton.
Best ditto	£13 0 0 ..	£13 10 0	14 0 0

Wire Nails (Points de Paris)—									
3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt

	Per ton.	Per ton.
Cast-Iron Columns	£6 17 6 to	£8 10 0
Cast-Iron Stanchions	6 17 6 ..	8 10 0
Rolled-Iron Fencing Wire	8 5 0 ..	8 10 0
Rolled-Steel Fencing Wire	7 5 0 ..	7 10 0
Galvanised	8 15 0 ..	9 5 0
Cast-Iron Sash Weights	5 10 0 ..	5 15 0
Cut Floor Brads	10 15 0 ..	—
Corrugated Wire, 24 gauge	16 0 0 ..	—
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14 5 0 ..	—

B.B. Drawn Telegraph Wire, Galvanised—			
0 to 8	10	11	12
£10 10s. £10 15s. £11 0s. £11 5s. £11 15s.			
per ton.			

Cast-Iron Socket Pipes—			
3in. diameter	£6 15 0 to	£7 2 6	
4in. to 6in.	6 10 0 ..	6 12 6	
7in. to 24in. (all sizes)	6 17 6 ..	7 2 6	

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints 5s. per ton extra.]

Fig Iron—		Per ton.
Cold Blast, Lillieshall	80s. 0d. to	127s. 6d.
Hot Blast, ditto	87s. 0d. ..	97s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—		
Gas-Tubes	72½	p.c.
Water-Tubes	66½	"
Steam-Tubes	65	"
Galvanised Gas-Tubes	60	"
Galvanised Water-Tubes	56½	"
Galvanised Steam-Tubes	50	"

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	£23 15 0 to	—
Country	24 15 0 ..	—
Lead Barrel Pipe, Town	24 15 0 ..	—
Country	25 15 0 ..	—
Lead Pipe, Tinned inside, Town	25 15 0 ..	—
Country	26 15 0 ..	—
Lead Pipe, Tinned inside and outside	28 5 0 ..	—
Country	29 5 0 ..	—
Composition Gas-Pipe, Town	26 15 0 ..	—
Country	27 15 0 ..	—
Lead Soil-pipe (up to 4in.) Town	26 15 0 ..	—
Country	27 15 0 ..	—
[Over 4in. £1 per ton extra.]		
Lead, Common Brands	17 17 6 ..	£18 12 6
Lead Shot, in 28lb. bags	24 15 0 ..	—
Copper Sheets, sheathing & rods	84 0 0 ..	84 10 0
Copper, British Cake and Ingot	69 15 0 ..	69 5 0
Tin, English Ingots	172 0 0 ..	173 0 0
Do., Bars	175 0 0 ..	176 0 0
Pig Lead, in 1cwt. Pigs (Town)	19 9 6 ..	19 10 0
Sheet Lead, Town	23 5 0 ..	—
Country	24 5 0 ..	—
Genuine White Lead	29 15 0 ..	—
Refined Red Lead	29 0 0 ..	—
Sheet Zinc	65 0 0 ..	—
Old Lead, against account	17 15 0 ..	—
Tin	9 12 0 ..	—
Cut nails (per cwt. basis, ordinary brand)	0 12 3 ..	—

* For 5 cwt. lots and upwards.

SLATES.

	in.	in.	£ s. d.	per 1,000 of
Blue Portmadoc .. 20 x 10 ..	12	12	6	1,200 at r. stn.
" .. 16 " 8 ..	6	12	6	"
Blue Bangor .. 20 " 10 ..	13	2	6	"
" .. 20 " 12 ..	13	17	6	"
First quality .. 20 " 10 ..	13	0	0	"
" .. 20 " 12 ..	13	15	0	"
" .. 16 " 8 ..	7	5	0	"
Eureka unfading green .. 20 " 10 ..	15	17	6	"
" .. 20 " 12 ..	18	7	6	"
" .. 18 " 10 ..	13	5	0	"
" .. 16 " 8 ..	10	5	0	"
Permanent Green .. 20 " 10 ..	11	12	6	"
" .. 18 " 10 ..	9	12	6	"
" .. 16 " 8 ..	6	12	6	"

BRICKS.

(All prices net.)

First Hard Stocks...	£1 15 0	per 1,000	alongside, in
Second Hard Stocks	1 11 0	"	" river.
Mild Stocks	1 9 0	"	"
Picked Stocks for			" delivered
Facings	2 5 0	"	" at rly. sta.
Flettons	1 14 0	"	"
Pressed Wire Cuts	1 18 0	"	"
Red Wire Cuts	1 14 0	"	"
Best Fareham Red	3 12 0	"	"
Best Red Pressed			"
Ruabon Facing	5 0 0	"	"
Best Blue Fressed			"
Staffordshire	3 15 0	"	"
Ditto Bullnose	4 0 0	"	"
Best Stourbridge			"
Firebricks	4 0 0	"	"
2 1/2 in. Best Red Ac-			" (Net, delivered in
crington Plastic	4 10 6	"	" full truck loads
Facing Bricks			" in London.
3 1/8" Accrington Best Red Plastic Facing	per 1,000		
Bricks	£2 10 0		
3 1/8" ditto Second Best Plastic Facing	2 9 6		
Ditto Ordinary Secondary Bricks	1 11 3		
Ditto Plastic Engineering Bricks	1 17 6		
Sewer Arch Brick not more than 3 1/2 in			
thickest part	2 0 0		
3 1/8" Chimney Bricks fit for outside work	2 6 0		
3 1/8" ditto ditto through and through	2 0 0		
3 1/8" Beaded, Ovolo and Bevel Jamb; Octa-			
gons; 2 1/2" and 3" radius Bullnoses; Stock			
patterns	3 7 6		
Accrington Air Bricks, 9" x 2 course deep, each	0 0 6		
Ditto ditto 9" x 1 course	0 0 3		
Accrington Camber Arches:-			
3 course deep, 4 1/2" soffit, per foot opening	0 1 3		
4 ditto 4 1/2" ditto ditto ditto	0 1 8		
5 ditto 4 1/2" ditto ditto ditto	0 2 1		
6 ditto 4 1/2" ditto ditto ditto	0 2 6		
3 ditto 9" ditto ditto ditto	0 2 1		
4 ditto 9" ditto ditto ditto	0 2 11		
5 ditto 9" ditto ditto ditto	0 3 6		
6 ditto 9" ditto ditto ditto	0 4 6		

Net free on rail, or free on boat at works.

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

White, Ivory, and	Best.	Buff, Cream, Other	Second
Salt Glazed.	Best.	Seconds.	Best.
Best.	Seconds.	Best.	Seconds.
Best.	Seconds.	Best.	Seconds.
Stretchers—	£12 7 6	£10 17 6	£13 17 6
Headers—	11 17 6	10 7 6	13 7 6
Quoins, Bullnose, and 4 1/2 in. Flats—	15 17 6	14 17 6	17 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6
Double Headers—	14 17 6	13 7 6	17 17 6
One side and two ends, square—	15 17 6	14 17 6	17 17 6
Two sides and one end, square—	19 17 6	18 7 6	22 17 6
Splays and Squints—	17 7 6	15 7 6	21 17 6
Plinth and Hollow Bricks, Stretchers and Headers—	5d. each	4d. each	6d. each
Double Bullnose, Round Ends, Bullnose Stops—	5d. each	4d. each	6d. each
Rounded Internal Angles—	4d. each	3d. each	5d. each

MOULDED BRICKS.

Stretchers and Headers—	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—	1 1/2 each	1 1/2 each	1 1/2 each	1 1/2 each
Sill Bullnose, Stretchers, and Headers—	5d. each	4d. each	6d. each	5d. each
Majolica or Soft Glazed Stretchers and Headers	£22 17 6			
" " Quoins and Bullnose	27 17 6			
Compass bricks, circular and arch bricks	of single radius	£6 per 1,000	over above	list for their respective kinds and colours
Camber arch bricks, any kind or colour,	by 4 1/2 in.			
18. 2d. each	by 2 1/2 in.			
Stretchers cut for Closers and Nicked Double				
Headers, £1 per 1,000 extra.				

* These prices are carriage paid in full truck loads			
to London Stations.	s. d.		
Thames Sand	7 6	per yard, delivered	
Pit Sand	7 0	"	
Thames Ballast	6 0	"	

Best Portland Cement	36 0	to 41 0	Per ton,
Ground Blue Lias Lime	21 0	per ton delivered	

Exclusive of charge for sacks.

Grey Stone Lime	13 6	to 14 0	delivered
Stourbridge Fireclay in sacks	27s. 0d.	per ton at	
railway station.			

STONE.*

Red Mansfield, in blocks	per foot cube	£0 2 4
Darley Dale, ditto	"	0 2 3
Red Corsehill, ditto	"	0 2 2
Closeburn Red Freestone, ditto	"	0 2 0
Ancaster, ditto	"	0 1 10
Greenshill, ditto	"	0 1 10
Beer, ditto	"	0 1 6
Chilmark, ditto (in truck at		
Nine Elms)	"	0 1 10 1/2
Hard York, ditto	"	0 2 0
Do. do. 6 in. sawn both sides,		
landings, random sizes	per foot sup.	0 2 8
Do. do. 3 in. slab sawn two		
sides, random sizes	"	0 1 3

* All F.O.B. London.

Bath Stone, delivered on road	per foot cube	£ s. d.
waggons, Paddington Depot	0 1 7 1/2	
Ditto, ditto, Nine Elms Depot	"	0 1 9 1/2
Beer Stone, delivered on rail	"	0 1 1
at Seaton Station	"	0 1 1
Ditto, delivered at Nine Elms	"	0 1 7 1/2
Station	"	0 1 7 1/2
Portland Stone, in random blocks of 20ft. average:-		
Delivered on road waggons	Brown	White
at Paddington Depot,	Whit Bed.	Base Bed.
Nine Elms Depot, or	Per foot cube.	
Pimlico Wharf	£0 2 3	£0 2 4 1/2

TILES.

Plain red roofing tiles	42 0	per 1000	ry. sn.
Hip and Valley tiles	3 7	per doz.	"
Brosely tiles	50 0	per 1000	"
Ornamental tiles	52 6	"	"
Hip and Valley tiles	4 0	per doz.	"
Ruabon red, brown, or brindled			
ditto (Edwards)	57 6	per 1000	"
Ornamental ditto	60 0	"	"
Hip tiles	4 0	per doz.	"
Valley tiles	3 0	"	"
Selected "Perfecta" roofing			
tiles: Plain tiles (Peake's)	46 0	per 1000	"
Ornamental ditto	48 6	"	"
Hip tiles	3 10 1/2	per doz.	"
Valley tiles	3 4 1/2	"	"
"Rosemary" brand plain tiles	48 0	per 1000	"
Ornamental tiles	50 0	"	"
Hip tiles	4 0	per doz.	"
Valley tiles	3 8	"	"
Staffordshire (Hanley) Reds or			
brindled tiles	42 6	per 1000	"
Hand-made sand-faced	45 0	"	"
Hip tiles	4 0	per doz.	"
Valley tiles	3 6	"	"
Hartshill "brand plain tiles,			
sand-faced	45 0	per 1000	"
Pressed	42 6	"	"
Ornamental ditto	47 6	"	"
Hip tiles	4 0	per doz.	"
Valley tiles	3 6	"	"

OILS.

Rapeseed, English pale, per tun	£28 15 0	to £29 5 0
Ditto, brown	26 15 0	" 27 5 0
Cottonseed, refined	29 0 0	" 30 0 0
Olive, Spanish	39 10 0	" 40 0 0
Seal, pale	21 0 0	" 21 10 0
Cocoonut, Cochin	46 0 0	" 46 10 0
Ditto, Ceylon	42 10 0	" 43 0 0
Ditto, Mauritius	42 10 0	" 43 0 0
Palm, Lagos	32 5 0	" 33 5 0
Ditto, Nut Kernel	35 0 0	" 35 10 0
Oleine	17 5 0	" 19 5 0
Sperm	30 0 0	" 31 0 0
Lubricating, U.S.	0 7 0	" 0 8 0
Petroleum, refined	0 0 6 1/2	" 0 0 6
Tar, Stockholm	1 6 0	" 1 10 0
Ditto, Archange	0 19 6	" 1 0 0
Linseed Oil	0 2 8 1/2	"
Baltic Oil	0 2 11 1/2	"
Turpentine	0 3 5 1/2	"
Putty (Genuine Linseed		
Oil	per cwt.	0 9 0
Pure Linseed Oil		
"Storty" Brand	0 9 0	"

GLASS (IN CRATES).

English Sheet Glass: 15oz.	26oz.	32oz.
Fourths	5d.	6d.
Thirds	5d.	6d.
Fluted Sheet	4d.	5d.
Hartley's English Rolled	3d.	3d.
Plate	3d.	3d.
Figured Rolled and Repoussé	4d.	6d.

VARNISHES, &c.

Fine Pale Oak Varnish	per gallon	£0 8 0
Pale Copal Oak	"	0 10 6
Superfine Pale Elastic Oak	"	0 12 6
Fine Extra Hard Church Oak	"	0 10 0
Superfine Hard-drying Oak, for seats of		
churches	"	0 14 6
Fine Elastic Carriage	"	0 12 0
Superfine Pale Elastic Carriage	"	0 16 0
Fine Pale Maple	"	0 10 0
Finest Pale Durable Copal	"	0 18 0
Extra Fine French Oil	"	1 1 0
Eggshell Flattening Varnish	"	0 18 9
White Copal Enamel	"	1 4 9
Extra Pale Paper	"	0 12 0
Best Japan Gold Size	"	0 10 0
Best Black Japan	"	0 16 0
Oak and Mahogany Stain	"	0 9 0
Brunswick Black	"	0 8 0
Berlin Black	"	0 16 0
Knotting	"	0 10 6
French and Brush Polish	"	0 10 0

Ashton Education Committee decided on Monday night to apply to the Local Government Board for permission to borrow £12,075 for the erection of a new elementary school off Mossley-road.

Mr. J. C. Haller, assistant county surveyor of Nottinghamshire, is to perform the duties of Mr. E. P. Hooley, who has joined H.M. forces. The county council have decided to advertise for a successor to Mr. Hooley at a salary of £750 per annum and travelling expenses.

The death occurred on Tuesday week of Mr. Nathan Stubbs, of 17, Cope's-avenue, Tunstall, who for the past three years had been managing director of Messrs. Charles Cope, Ltd., builders and contractors, of Tunstall. Prior to the formation of a limited company he had been foreman since 1884. He leaves a widow and five daughters.

TRADE NOTES.

Under the direction of Messrs. Thornley Brothers, architects, Library-street, Wigan, Boyle's latest patent "Air-pump" ventilator has been applied to Christ Church, Martin's lane, Liscard, Cheshire.

In the large block of buildings now in course of erection for the new sanatorium at Willsingham the powder Pudlo has been included in the specification.

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TENDERS.

* Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BIRMINGHAM.—For alterations to Northwood-street swimming baths, for the baths committee city council. Mr. W. F. Edwards, 1, Newhall-street, Birmingham. Quantities by Mr. P. Lawrence Watson, Birmingham.

Harris, J. T., Stratford-road, Birmingham (accepted)... £1,968 0 0

CHATHAM.—For the erection of business premises at 162, High-street, for Messrs. Lennards, Ltd., Queen's-road, Bristol. Messrs. Bridgman and Bridgman, A.R.I.B.A., M.S.A., Torquay, Paignton, and Bristol, architects:—

Clogg, H. V., London ... £2,088 0 0

West and Sons, Rochester ... 2,075 0 0

Skinner, C. E., & Son, Chatham, 1,990 0 0

Bendon, T., and Son, London ... 1,817 0 0

* Accepted.

CLAPHAM COMMON, S.W.—For the erection of conveniences on north-western portion, for the parks committee of the London County Council:—

Hollingsworth, H. H., Peckham ... £745 0 0

Triggs, E., and Co., Clapham ... 715 0 0

Fletcher, F. W., Tooting ... 697 0 0

Bickerton, W., Catford (accepted) ... 635 0 0

(Architect's estimate, £740.)

CLERKENWELL, N.—For the provision of an electric lift (including guides and gear) for passengers and light goods at the stores premises in Clerkenwell-cloze, for the London County Council:—

Medway's Safety Lift Co., Deptford, S.E. ... £502 0 0

Aldous and Campbell Ltd., Lower Bland-street, S.E. ... 495 0 0

Waygood-Obis, Ltd., Falmouth-road, S.E. ... 475 0 0

Ditto—Alternative tender ... 455 0 0

Spagnoletti, Ltd., Goldhawk-road, W. ... 463 0 0

Easton Lift Co., Ltd., Southwark, S.E. ... 463 0 0

Ditto—Various alternative

tenders £443, £445, and higher

amounts up to ... 523 0 0

Smith, Major, and Stevens, Ltd., Northampton ... 450 0 0

Ditto—Alternative tender, not in

accordance with specification ... 422 0 0

Titan Lift Co., Ltd., Holborn ... 450 0 0

(Chief engineer's estimate, £385.)

* Accepted.

CLISSOLD PARK, N.—For the adaptation of part of mansion for use as tenements for the staff, for the parks committee of the London County Council:—

Rowley Bros., Wood Green ... £798 0 0

Marchant, Hirst, and Co., Highgate ... 788 0 0

Stevens and Son, Crouch Hill ... 738 0 0

Newell, H., Poplar ... 708 0 0

Fletcher, F. W., Tooting ... 690 0 0

Nicholls, H., Ltd., Finchley ... 689 0 0

(Architect's estimate, £640.)

* Accepted.

FLEETWOOD.—For roofing over fish stage, for the Lancashire and Yorkshire Railway. Mr. R. C. Irwin, Hunts Bank, Manchester:—

Taylor, E., & Co., Ebor Saw Mills, Littleborough

(Accepted.)

HACKNEY MARSH, N.E.—For the erection of dressing and storage accommodation, for the parks committee of the London County Council:—

Stevens and Son, Crouch Hill ... £727 0 0

Harding, R., and Son, Brixton ... 724 0 0

Roberts, A., and Co., Ltd., Kensington ... 682 10 0

Harrison, J., and Co., Camberwell (accepted) ... 591 10 0

(Architect's estimate, £652.)

GREENWICH.—For the execution of works and the supply of plant at the Greenwich generating station, for the London County Council:—

(i.) Additions and alterations to coal-bunkers and ash-hoppers, and the erection of additional workshops and stores:—

Bowyer, J. and C., Ltd., Upper Norwood	£14,600 0 0
Wallis, G. E., and Sons, Ltd., Haymarket, S.W.	13,967 0
Holland & Hannen, Bloomsbury	13,888 0 0
Smith, J., and Sons (Norwood), Ltd., South Norwood	12,930 0 0
Godson, G., & Sons, Kilburn-lane	12,382 0 0
Downs, W., Ltd., Walworth	12,176 0 0
Wall, C. Ltd., Chelsea (accepted)	12,171 10 0
(Architect's estimate, £13,800.)	

(ii.) Supply of an ash conveyor:—

New Conveyor Co., Ltd., Smethwick	1,567 2 6
Spencer & Co., Ltd., Melksham	1,487 0 0
Babcock and Wilcox, Ltd., Renfrew (accepted)	1,303 13 4

(Estimate of the chief officer of tramways, £1,250.)
In connection with the work under (i.) above, Charles Wall, Ltd., will execute the painting at £464 5s. 1d.

GREENWICH.—For raising the height of the shaft at the condenser house, Greenwich generating station, for the London County Council:—

Cochrane, J., & Sons, Ltd., about	£1,000 0 0
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(Accepted.)
ISLINGTON.—For enlarging Shelburne-road school, Islington, for the London Education Committee:—

Maddison, W. J., Canning Town	£957 0 0
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(Accepted.)
LAMBETH, S.E.—For paving works in connection with the widening of Stamford-street, in front of the new Government Stationery Office, for the London County Council:—

Mowlem, J. and Co., Pimlico	£400 0 0
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(Accepted.)
LEWISHAM, S.E.—For the erection of a new council school in Adams-vill-road, Lewisham, for the London Education Committee:—

Smith, J., and Sons, South Norwood (accepted)	£17,979 0 0
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LONDON.—For the supply of electric insulating materials, schedule No. 15, for one year, for the London County Council:—

Andrew, L., and Co., 2, Whitworth-street West, Deansgate, Manchester (accepted). Estimate value, £463. (53 firms invited to tender.)

LONDON.—For the supply during one year of timber, pine or hardwoods, schedule No. 122a, for the London County Council. Accepted tenders and estimated value of contracts:—

Items 7 (b), 11 (a) to (d), 13 (e) and (d), 14 (a) and (b), 15 (b) and (c), 17, 18 (a) to (d), 19 (a) and (b) and 23—	
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Hunter, W. and J. R., Ltd., Victor Park, N.E.	£376 0 0
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Items 4, 5, 6, 8 (d) to (f) 9 (c) to (f), 15 (a), 16 (a) to (d), 22 and 23—	
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Ingram, Perkins, and Co., Barbican, E.C.	4,190 0 0
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Items 20 (a) and (b), 21 (a) and (b), and 23:—	
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Kennedy, J., & Co., Ltd., Downham-road, N.	£288 0 0
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Item 10 (a) and (b):—	
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Millars Timber & Trading Co., Ltd., Pinners Hall, E.C.	176 0 0
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Items 7 (a), 8 (a) to (c), 8 (g) to (j), 9 (a) and (b), 23, 24 (a) to (b), and 25 (a) to (e):—	
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Sherry, E., Homerton Bridge, E.	959 0 0
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Items 12 (a) and (b) and 13 (a) and (b):—	
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Windebank, O., and Son, Bath.	483 0 0
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(Sixty-two firms invited to tender.)

LONDON.—For the supply of high and low-tension switchgear for various sub-stations, for the London County Council:—

British Westinghouse Electric and Manufacturing Co., Ltd., Manchester	£1,324 17 0
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Switchgear and Cowans, Ltd., Salford	1,275 3 0
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Ferguson, Pailin, and Co., Manchester (accepted)	1,275 0 0
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Spagnoletti, Ltd., Shepherd's-bush	1,240 7 0
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Johnson and Phillips, Ltd., Charlton	1,177 19 6
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(Estimate of the chief officer of tramways, £1,100.)

LONDON.—For the erection of an additional weather shelter on the Victoria Embankment, near Blackfriars Bridge:—

Bowyer, J. and C., Ltd., Upper Norwood	£1,180 0 0
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Wall, C., Ltd., Chelsea	1,150 0 0
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Roberts, A., and Co., Ltd., Kensington (accepted)	962 0 0
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(Architect's estimate, £900.)

LONDON.—For the supply of (A) 40,000 creosoted deal paving blocks, 3in. by 9in. by 5in., (B) 120,000 ditto, 3in. by 9in. by 4in., (C) 50,000 ditto, 3in. by 9in. by 4in., to be delivered to County Warf, 23, Belvedere-road, S.E., and (D) 50,000 ditto 3in. by 4in., to be delivered to Poplar Wharf, Leven-road, E., for the London County Council. Price per 1,000 blocks:—

A.	B.	C.	D.
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Millar's Timber and Trading Co., Ltd.	£11 17 9	£10 16 3	£9 12 9
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Improved Wood Pavement Co., Queen Victoria-st.	11 12 6	10 10 0	9 9 0
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Burt, Boulton, and Haywood, Ltd., Cannon-st.	11 10 0	10 7 3	9 4 0
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Griffiths, W., and Co., Ltd., Bishopsgate	11 9 9	10 15 0	10 5 0
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Gabriel, T., Sons, and Burtons, Lambeth	11 7 9	10 9 0	9 5 6
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Acme Flooring and Paving Co. (1904), Ltd.	11 5 9	10 3 3	9 1 0
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Howard, W., Bros., and Co., Trinity-sq., E.C.	11 5 0	10 2 6	9 0 0
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* Accepted.

LONDON.—For reconstruction of Tredegar-road bridge, for the London County Council:—

Perry and Co. (Bow), Ltd., Westminster, S.W.	£6,637 0 0
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Coles, A. N., Plymouth	6,157 0 0
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Fasey, A., & Son, Leytonstone, E.	5,963 15 6
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Muirhead, W., and Co., Ltd., Westminster, S.W. (accepted)	5,671 18 0
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(Chief engineer's estimate, £5,800.)

LONDON, S.E.—For effecting alterations to the testing plant, and providing additional gas-holders at the Newington gas-meter testing office, for the London County Council:—

Glover, G., and Co., Ltd., Chelsea, S.W.	£650 0 0
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The Gas Meter Co., Ltd., Kingsland-road, N.E.	623 13 0
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Parkinson and W. B. Cowan, Ltd., City-road, E.C. (accepted)	495 0 0
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(Estimate of the chief officer of the public control department, £500.)

MILLFIELDS, S.W.—For fencing works, for the Parks Committee of the London County Council:—

Faulkners, Ltd., Walton-on-Thames	£229 11 0
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Hill and Smith, Ltd., Brierley Hill	179 5 6
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Elwell, J., Ltd., Birmingham	169 0 0
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Johnson Bros., and Co., Ltd., Charles-street	161 7 6
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Bayliss, Jones, and Bayliss, Ltd., Cannon-street (accepted)	159 10 0
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(Chief's officer's estimate, £170.)

NEWBURN HALL-ON-TYNE.—For the erection of a school (350 places), for the Northumberland Education Committee. Mr. C. Williams, The Moothall, Newcastle-on-Tyne, architect:—

Douglass, J. S., Mossley-street, Newcastle-on-Tyne (accepted)	£3,747 0 0
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(Lowest of 10 tenders received.)

NEWPORT, ISLE OF WIGHT.—For the erection of business premises, High-street, for Messrs. Lennards, Ltd., Queen's-road, Bristol. Messrs. Bridgman and Bridgman, A.R.I.B.A., M.S.A., Torquay, Paignton, and Bristol, architects:—

Jenkins and Sons, Ltd., Southampton	£1,695 0 0
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Day, H., Cowes	1,625 0 0
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Jenkins, E. W., Newport	1,624 10 0
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Brading, W. H., and Son, East Cowes	1,489 0 0
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Westbrook, T., and Son, Cowes	1,422 0 0
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White, W., Freshwater	1,350 0 0
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* Accepted.

PENSBY, CHESHIRE.—For building a wash-out block at Pensby, for the Wirral Joint Hospital Board:—

Lee, J., & Sons, Higher Bebington (accepted)	
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POPULAR AND KENTISH TOWN.—For the provision of accommodation for motor lorries at the Leven-road, Poplar, and Leighton-road, Kentish-town, permanent way depots, for the London County Council:—

Moss, S. E., Southend-on-Sea	£2,739 9 11
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Hill, R. W., Upper Holloway	2,625 2 11
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Coxhead, F. J., Leytonstone	2,671 5 0
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The Kensington Developments, Ltd., South Kensington	2,568 0 0
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Wall, C. Ltd., Chelsea	2,526 0 0
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Fenn, A. M., Woolwich	2,513 8 5
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Coles, A. N., Plymouth	2,511 13 6
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Marsland, J., & Sons, Walworth	2,477 0 0
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Peppiatt, H., and Cooper, High Holborn	2,446 14 6
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Barker, G., New-road, E.	2,445 16 6
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Stevens and Sons, Crouch-hill	2,418 0 0
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Cook, H. J., and Sons, Penge	2,416 0 0
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Lawrence, E., and Sons, Ltd., City-road	2,314 0 0
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Hughes, R. M., West Kensington	2,295 0 0
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Roberts, A., and Co., Ltd., Kensington	2,280 0 0
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Rowley Bros., Wood Green	2,247 0 0
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Kazak, L., Belvedere	2,235 0 0
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Collings, C., Dartford	2,234 4 3
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Lovell, Y. J., and Son, Gerrard's-cross (accepted)	2,157 0 0
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(Architect's estimate, £2,360.)

ROCHDALE.—For the construction of a new carshed and workshop, for the corporation. Accepted tenders:—

Reinforced concrete for foundations:—	
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Howarth, R. and T.	
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Steel work:—	
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Lambourne and Co., Manchester.	
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Building:—	
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Rangeley, J. E., Rochdale.	
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(Total amount of accepted tenders, £11,200.)

RUGBY.—For the erection of new business premises, Regent-street, for Messrs. Lennards, Ltd. Messrs. Bridgman and Bridgman, A.R.I.B.A., M.S.A., Torquay, Paignton, and Bristol, architects:—

Cullen, J. W., Leicester	£5,360 0 0
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Linnell and Son	4,900 0 0
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Wilkins, R., and Sons, Bristol	4,882 0 0
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White, A. F.	4,535 0 0
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Farrell, J., and Son	4,340 0 0
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Cockerell, C.	4,300 0 0
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Foster and Dixie, Ltd.	4,263 0 0
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Drever, O. P., and Son, Ltd.*	3,936 0 0
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(Rest of Rugby.)
* Accepted.

TOTTENHAM.—For the painting work in connection with the erection of 79 cottages on section C of the White Hart-lane estate, for the London County Council:—

Fairhead, A., and Son, Enfield	£600 0 0
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Willmott, J., and Sons, Hornsey	566 0 0
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Monk, A., Lower Edmonton	558 10 0
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Nicholls, H., Ltd., Finchley	550 10 0
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Rowley Bros., Wood Green	513 0 0
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* Accepted.
(Architect's estimate, £575.)

TOTTENES.—For extending the sewers and water mains on the Stuart estate, for the town council:—

Brook, T. E. (accepted)	£267 0 0
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WESTMINSTER, S.W.—For paving works at Nos. 28 to 32, Abingdon-street, and on east side of Smith-square, for the London County Council:—

Farrow, H., Brixton, S.W.	£4,923 14 3
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Limmer Asphalt Paving Co., Ltd., Westminster, S.W.	4,590 3 9
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Acme Flooring and Paving Co. (1914), Ltd., Victoria Park, N.E.	4,422 5 6
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Val de Travers Asphalt Paving Co., Ltd., Bishopsgate, E.C.	4,357 8 1
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Improved Wood Pavement Co., Ltd., Queen Victoria-st., E.C.	4,257 18 11
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Griffiths, W., and Co., Ltd., Bishopsgate, E.C.	4,192 0 8
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Anderson, G. J., Poplar	4,151 18 6
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Mowlem, J., & Co., Ltd., Westminster, S.W. (accepted)	4,027 0 0
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(Chief engineer's estimate, £3,865 5s. 11d.)

WOLSTANTON, STAFFS.—For the erection of council offices, for the United Urban District Council:—

Davenport, G. H.	£7,259 0 0
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Wilton, S.	7,196 0 0
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Grant and Sons	7,100 0 0
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Grant, H.	6,800 0 0
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Finney and Broadhurst	6,800 0 0
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Cooke, J.	6,714 0 0
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Rodgers, W.	6,650 0 0
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Smith, C., and Son	6,550 0 0
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Pemberton, P.*	6,318 0 0
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* Recommended for acceptance.

[At the meeting of the urban council, it was resolved by seven votes to six, to refer back the recommendation to the committee, it being considered unwise to build during the war.]

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the Editor of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

* Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits, on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

NOTICE.

Bound copies of Vol. CVII. are now ready, and should be ordered early (price 12s. each, by post 12s. 9d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XL., XLVI., XLVII., XLVIII., XLIX., L., LII., LIII., LIV., LV., LVI., LVII., LVIII., LIX., LX., LXI., LXII., LXIII., LXIV., LXV., LXVI., LXVII., LXVIII., LXIX., LXX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., LXXVII., LXXVIII., LXXIX., XC., XCI., XCII., XCIII., XCIV., XCV., XCVI., XCVII., XCVIII., XCIX., C., CI., CII., CIII., CIV., CV., CVI., and CVII. may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

RECEIVED.—D. Bros. and Co., Ltd.—B. T. B.—G. I

LIST OF COMPETITIONS OPEN.

Feb. 8—Designs for Workmen's Dwellings (500 persons), Rathbone-street Area, Liverpool. (H. Hartley, F.R.I.B.A., Assessor)	£100, £50, and £25	E. R. Pickmere, Town Clerk, Municipal Offices, Liverpool.
27—Laying-out about Three Acres, and Erecting Houses for Working Classes, Connah's Quay. (Mr. S. Evans, L.R.I.B.A. F.S.I. Assessor)		T. W. Hughes, Clerk, Council Offices, Connah's Quay, Chester.
27—Children's Home, Spalding		H. S. Maples, Clerk to Guardians, Spalding.
Mar. 30—Water-supply Scheme, Chew Magna	£100, £50	J. S. Dury, Clerk to Clifton R.D.C., Temple Cloud, Bristol.

LIST OF TENDERS OPEN.

BUILDINGS.

Feb. 5—Shops, Stores, and Stables, Abercrombie	Cwmnach Indus. Co-op. Soc.	T. Roderick, Archt., Ashbrook House, Aberdare.
5—Poor-Law Institution, Repairs to, Salford	Guardians	F. Townson, Clerk, Poor-Law Offices, Eccles New-rd., Salford.
5—Offices, Frederick-road Electricity Works, Salford	Corporation	The Borough Elec. Engineer, Frederick-road, Pendleton.
5—St. Mary's R.C. School, Additions to, Fenton	Guardians	Wood and Goldstraw, Archts., Tunstall.
5—Reroofing Hospital Kitchen and Laundry, Clonakilty	Abersychan Indus. Co-Op. Soc.	J. J. O'Crowley, Archt., Clonakilty.
6—Shop and Cottage, Albion-road, Pontypool	Essex Education Committee	The Architect, Co-op. Wholesale Soc., Balloon-st., Manchester.
6—Cottages (30), Earlestown	Cornwall Education Committee	A. Briggs, F.S.I., Town Hall, Earlestown.
6—Council School, Additions to (320 places), Shoburness	Cornwall Education Committee	G. Totham Forrest, F.G.S., 79, Duke-street, Chelmsford.
6—School, Additions to, Tregoney	Guardians	S. Hill, Archt., Green-lane, Redruth.
6—School Improvements, Poundstock	W. L. Ingle, Ltd.	B. C. Andrew, Archt., Biddicks-court, St. Austell, Cornwa'l.
6—Workhouse, Weigh-bridge at, Fairmile, Christchurch	Urban District Council	A. Drutt, Clerk, 16, High-street, Christchurch.
8—Lime Pits and Building, Millsaw Works, Churwell	Urban District Council	T. A. Battery, L.R.I.B.A., Queen-street, Morley.
8—Depot Buildings, Broadstairs	Sculcoates Guardians	H. Hurd, C.E., Sur., Council Offices, Broadstairs.
8—Cottage, Cartmel Fell	Town Council	C. E. Hines, Sur., Council Offices, Broad-st., Windermere.
8—Hospital, Grove House Estate, Newland, Hull	Denbigh Education Authority	T. B. Atkinson, M.S.A., Archt., Trinity House-lane, Hull.
8—Workmen's Dwellings, Penzance	Education Committee	Cowell and Drewitt, Archts., Leonard's Chambers, Penzance.
8—Girl's County School, Wrexham	Tynemouth Guardians	W. D. Wiles, 42A, High-street, Wrexham.
8—School, Additions to, Conway-street, Portsmouth	Guardians	A. H. Bone, Sur., Cambridge Junction, Portsmouth.
8—Children's Receiving Home, Newcastle-under-Lyme	Guardians	Chapman and Snaps, Archts., Newcastle-under-Lyme
8—Receiving Home, Extension of, North Shields	Tynemouth Guardians	W. Stockdale, A.R.I.B.A., 81, Howard-street, North Shields.
8—Cottage Homes, Exning road, Newmarket	Guardians	John Flatman, Archt., Beaufort Studio, Newmarket.
8—Stables at Institution, Preston-road, North Shields	Guardians	W. Stockdale, A.R.I.B.A., 81, Howard-street, North Shields.
9—Residence, Additions to, Burnley-road, Halifax	Great Western Railway Co.	C. Williams and Sons, Archts., Post Office Buildings, Halifax.
9—Houses (16), Repairs to, Ash-grove, Handsworth	Urban District Council	A. E. Bolter, Secretary, Paddington Station, London.
9—Hocken's House Chapel, Renovation of, St. Cleer	Hampshire County Council	The Rev. J. Rickard, St. Cleer, Cornwall.
10—Isolation Hospital, Wick, Littlehampton	Town Council	H. Howard, F.S.I., Sur., Town Offices, Littlehampton.
10—Pair of Cottages, Shipton Bellinger	Housing Committee	W. J. Taylor, County Sur., The Castle, Winchester.
10—Pavilion, Queen's Park, Crewe	Education Committee	G. Eaton Shore, Boro' Sur., Earle-street, Crewe.
10—Workmen's Dwellings, Coventry	Tewkesbury R.D.C.	J. E. Swindlehurst, City Eng., St. Mary's Hall, Coventry.
10—Little Heath School, Enlargement of, Coventry	W. Morris	G. and I. Steane, Archts., 22 Little Park-street, Coventry.
10—Six Cottages, Aston Cross, Ashchurch	John Lewis	Prothero, Phillott, & Barnard, Promenade, Cheltenham.
10—Four-Set Woollen Mill (Extension), Gildersome	H.M. Works Commissioners	J. Auty, A.R.I.B.A., Peel-street, Morley.
10—Houses (12), Repairs to, Nantyllyon	Corporation	W. Bevan, Archt., Bridgend.
11—Reconstructing Roofs to Galleries, Albert Museum, S.W.	Corporation	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
11—Electricity Sub-station, Thorpe Bay, Southend-on-Sea	Corporation	E. J. Elford, M.I.C.E., Municipal Buildings, Southend-on-Sea.
12—Waiting-rooms, Richmond Park, Glasgow	Town Council	J. Whitton, Supt. of Parks, 249, George-street, Glasgow.
12—Wadden Waterworks, Extensions to, Croydun	Parks Committee	J. M. Newnham, Town Clerk, Town Hall, Croydun.
12—Pavilion, Spencer Park, Coventry	Guardians	J. E. Swindlehurst, City Eng., St. Mary's Hall, Coventry.
12—Workhouse, Additions to, Tadcaster	H.M. Works Commissioners	Bromet and Thorman, Archts., Tadcaster.
12—Motor Garage & Handcart Shelter, Birmingham P.O.	Rural District Council	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
13—Labourers' Single Cottages (37), Milford	Urban District Council	S. Watters, Clerk, Council Offices, Milford, Ireland.
13—Houses (16), Stand-lane, Radcliffe	Urban District Council	W. L. Rothwell, Eng., Council Offices, Radcliffe, Lancs.
13—Public Baths, Purification Plant Works at, Batley	Parks Committee	J. H. Craik, Town Clerk, Batley.
14—Houses (54), Southall	Monmouthshire Education Com.	R. Brown, M.I.C.E., Town Hall, Southall.
15—Three Bowling Green Pavilions, Sheffield	Corporation	C. F. Wike, M.I.C.E., City Eng., Town Hall, Sheffield.
15—Presbyterian Chapel, Oakdale Village, Blackwood	Corporation	A. F. Webb, M.S.A., Tredegar Chambers, Blackwood, Mon.
15—Higher Elementary School (300 places), Newbridge, Mon	Corporation	J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.
15—Filter House at Heath, near Cardiff	Tredeggar Urban District Council	C. H. Priestley, M.I.C.E., City Hall, Cardiff.
15—Houses (15), Clay House-lane, Greetland	Joint Schools Committee	R. Horsfall and Sons, Archts., 22A, Commercial-st., Halifax.
15—Caretaker's Lodge at Cemetery, Cefn Golen	Corporation	W. Lloyd Roach, Sur., Belwelly House, Tredegar.
15—Boys' School (308 places), Hirwaun	Monmouth County Standing Com.	T. Roderick, Archt., Clifton-street, Aberdare.
16—Three Double Cottages, Lochgoilhead	Truro Rural District Council	J. Whitton, Parks Supt., 249, George-street, Glasgow.
16—Police Court and Station, Additions to, Abergavenny	Warrington Health Committee	W. Tanner, F.S.I., County Sur., Newport, Mon.
16—Four Dwellings, St. Just-lane, St. Mawes	Guardians	C. Hancock, Clerk, 12, Princess-street, Truro.
16—Sanatorium, Additions to, Sankey	Urban District Council	The Borough Surveyor, Town Hall, Warrington.
17—Children's Homes, Norwich	Leeds Education Committee	Morgan and Buckingham, Archts., 1, Upper King-st., Norwich.
17—Pumping Station, Beeston, Notts	Lindsey Education Committee	W. H. Radford, C.E., Albion Chambers, King-st., Nottingham.
17—Infants' School, Hough-lane, Bramley	Managers	J. Graham, Sec., Education Offices, Calverley-st., Leeds.
18—School, Additions to, Ashby-by-Brigs	St. Mary (Islington) Guardians	Scorer and Gamble, Archts., Bank-street Chambers, Lincoln.
18—School, Swimming Bath at, Ashford, Middlesex	H.M. Works Commissioners	H. Dighton Pearson, F.R.I.B.A., 76, Newman-st., Oxford-st., W.
18—Underpinning School, Hornsey-road, N.	Rhonda Urban District Council	E. J. Harrison, Archt., 9, Gray's Inn-square, W.C.
19—Head Post Office, Extension of, Bournemouth	West Riding Education Com.	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
19—Secondary School, Ferndale	E. S. Watts	J. Reeves, Archt., Hillside Cottage, Pentre.
19—School, Classrooms at, Hemsworth Kinsley	Somerset Works Committee	The Education Architect, County Hall, Wakefield.
20—Old Metropolitan Bank, Alterations to, Cardigan	H. Morgan	J. T. J. Williams, Archt., Napier-street, Cardigan.
20—Cottages (Six), Flax Bourton	Trustees	E. Stead, M.I.C.E., County Sur., Wells.
20—National School, St. Patrick's Holywell, Co. Fermanagh	Corporation	The Office of Public Works, Dublin.
21—Medical Hall, Additions to, Cardigan	Guardians	J. T. J. Williams, Archt., Napier-street, Cardigan.
21—Wesleyan School, Alterations to, Brightlingsea	Corporation	The Rev. F. Rabey, The Manse, Brightlingsea.
21—Heathfield Hospital, Additions to, Ayr	Guardians	J. Young, Burgh Sur., Town Buildings, Ayr.
24—Additional Story over Board Room, Upper Edmonton		J. C. S. Mummery, Archt., 13, Fitzroy-square, W.
No date—Bungalow, Buckie		G. Sutherland and C. George, Archts., Aberdeen and Buckie.
do.—Detached Residence near Station, Torrington		Smyth-Richards, Stapledon, & Fox, Bridge Chmbrs., Bideford.

ELECTRICAL PLANT.

Feb. 5—Various Electrical Stores (One Year), Bermondsey, S.E.	Borough Council	Fredk. Ryall, Town Clerk, Town Hall, Spa-road, S.E.
5—Cables, Newcastle-under-Lyme	Town Council	A. J. C. de Renzi, Boro' Elec. Eng., Newcastle-under-Lyme.
10—Testing Instruments, Adelaide	Postmaster-General's Dept.	The Commonwealth Offices, 73, Victoria-street, S.W.
10—Switchboard, Broken Hill, Sydney, N.S.W.		The Deputy Postmaster-General, Sydney, N.S.W.
10—Four Electric Cranes, Valencia		Junta de Obras del Puerto de Valencia, Valencia.
10—Converters, Perth, W.A.		The Deputy Postmaster-General, Perth, W.A.
10—Installation, Scawfell-street School, Hackney, N.E.	London County Council	The Chief Engineer, County Hall, Spring Gardens, S.W.
11—Low-tension Sub station Switchgear, Bolton	Electricity Committee	W. J. H. Wood, Boro' Elec. Eng., Spa-road, Bolton.
11—Materials (One Year), Bristol	Electricity Committee	H. Faraday Proctor, M.I.E.E., Corn-street, Bristol.
12—Plant, Llandudno	Urban District Council	A. Conolly, Town Hall, Llandudno.
15—Arc Lamp Carbons, St. Pancras, N.W.	Borough Council	C. H. F. Barrett, Town Clerk, Town Hall, Pancras-road, N.W.
16—Cable, Melbourne	Deputy Postmaster-General	The High Commissioner of Australia, 72, Victoria-st., S.W.
22—Installation at Technical Institute, Cardiff	Manchester Education Com.	A. Ellis, City Elec. Eng., The Hayes, Cardiff.
28—Transformers, Lake Coleridge, N.Z.		The Public Works Office, Wellington, N.Z.
Mar. 1—Electrical Plant, Brisbane		The Deputy Postmaster-General, Brisbane.

FENCING AND WALLS.

Feb. 6—Iron Fence at Playground, Anne-square, Pollokshaws	Glasgow Corporation	J. Lindsay, Town Clerk, City Chambers, Glasgow.
13—Fencing Cemetery, New-road, Woodston	Burial Joint Committee	H. W. Hawkins, Sur., Fletton.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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Strand, W.C.

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OUR ILLUSTRATIONS.

Board of Trade Offices, Victoria Embankment, London, S.W. Selected Design: Perspective View, Block Plan, Ground Floor and Principal Floor Plan; Elevation to the Thames and Longitudinal Section. Mr. E. Vincent Harris, F.R.I.B.A., Architect.—Design by Messrs. H. Percy Adams, F.R.I.B.A., and C. H. Holden, A.R.I.B.A. View: Elevation of River Front; Detail of same; Cross-section through Quadrangle, and Plans of Ground Floor and Principal Floor.

BOARD OF TRADE NEW OFFICES, THAMES EMBANKMENT: COMPETITION DESIGNS.

[WITH ILLUSTRATIONS.]

Last Friday we announced the award in this important competition. The four-square open site for these additional Government buildings overlooks the Embankment Gardens where a vacant space 150ft. wide will be used as a planted forecourt, and it is situate immediately to the rear of Inigo Jones's Classic Banqueting House in Whitehall. The land has a western frontage in the cul-de-sac known as Whitehall Gardens, extending northwards from the grounds of Montague House to the Horseguards Avenue which skirts the War Office, passing Whitehall Court on its way east to the Embankment. Whitehall Gardens will be opened up, and Gwydir House in front is to be pulled down. The site is wedge-shaped, being much narrower at the southern end, where at the outset the new premises will be commenced. The lay-out of the building had to be contrived so as to allow about half of its extent, including the chief apartments, to be built in the first instance as the initial part of the scheme. One hundred and eighty-seven designs were submitted in the original preliminary competition, and from these some ten plans were chosen for the final concours. Each chosen firm, or individual architect so chosen, had to amplify the first designs sent in, and will be paid an honorarium of £300. The award, as we have said, was announced in our pages last week, in favour of Mr. Emanuel Vincent Harris, F.R.I.B.A., of 8, New-square, Lincoln's Inn, W.C. The assessors were Sir Aston Webb, R.A., Mr. Reginald Blomfield, R.A., and Mr. Ernest Newton, A.R.A., P.R.I.B.A. It was understood that a columniated treatment was not required, and provision had to be allowed for the preservation of an old brick-built crypt located almost on the verge of the site in the N.W. corner, the angle coming very awkwardly, the groining of this historic chamber projecting some few feet above the level of the new ground floor, necessitating some steps up and down to accommodate these differences. This proviso so far hampered the planning of the new offices, and this obstruction had to be also dealt with outside in the open area for light to the new basement on the north elevation. The great height fixed for the block of buildings imposed obvious difficulties in regard to effective lighting, and the treatment of the topmost stories, whether by way of tall roofs exposed to view or by mural attics, materially affected the architectural treatment adopted by the ten competitors. The drawings are on

view till the 22nd inst. at York House, Kingsway, where they were adjudged.

THE SELECTED DESIGN.

Mr. Vincent Harris has submitted the most direct, simple, and economic scheme of the whole series, and we entirely endorse the award, much as we recognise the merits of some of the other plans. The choice has rightly fallen upon the design which has perhaps the largest lighting court or quad of any plan, and except on the ground floor it provides an undivided area without obstruction of any sort. The chief entrance is placed in the middle of the Whitehall Gardens elevation, and from thence a vista is obtained on to the river-side gardens, the triple archway repeating on the Embankment front. The bisecting corridor which runs through is 24ft. wide from out to out, and it forms a grand approach for ministers and high personages. The W. end is apsidal, and has niches for sculpture, beyond which a columniated treatment enhances the architectural character of this corridor, with its windows looking south. On the north Mr. Harris proposes to conserve the three historic rooms, which he suggests could be used as ministers' deputation rooms or for receptions. Besides this, the public having business in this building would be interested in these apartments, which are only one story high. The lay-out of the building follows the shape of the site, and only the acute corner of the west angle in the Horseguards Avenue is splayed off. A borrowed-light corridor extends all round the premises, with windows at the ends and much light on the E. and W. flanks from the big double flights of stairs, as well as at each extremity, where the diagonally-placed staircases are situate in a most clever way. On the north, in the middle of the façade, there is another opportunity for windows. A continuous borrowed light is found everywhere above the door-head level. The grand stairs do not proceed beyond the principal floor; after that a subsidiary staircase overlooking the quad goes up to the top floor. The four general working staircases are set in the internal angles of the lighting court, and these stairways are flanked by lavatories on both sides, with lifts also set right and left of the entrance vestibule, where there is a drinking fountain. The secondary doors at the ends of the W. and E. fronts lead to these lobbies set at the junction of the main passages and lateral corridors. The whole of the sub-ground floor under the lighting court is devoted to stack-room and administrative purposes, all being top-lighted, except where superposed by buildings. The reading-room is placed in the south wing, looking north, and

measures 68ft. by 22ft., divided into three parts. The conference rooms are on the principal floor, and overlook Montague House. The ministers and State officials occupy the whole of the east frontage, save where the big stairways intervene, as before named. A terrace of 40ft. width, with screen wall and masonry-built twin pavilions makes a grand feature facing the river aspect, and access to it is obtained from the casements of the ground-floor windows. A grey granite base is provided up to the balcony, which is level with the principal floor. The fenestration, set out in thirty-three bays, four floors high above this balustrade, is treated quite plainly with square heads and jambs in ashlar. The top two floors up to the governing frieze and crowning cornice are pilastered, with balconettes between the bases, and in this way the part of the building most seen from Westminster Bridge, Waterloo Bridge, Whitehall, and St. James's Park becomes most appropriately ornate and handsome. Broad piers occur at each end of the façades; and towards the Thames at the extremities of the front, the stone attics carried up above the cornice are associated with big palatial chimneys, with obelisks, in a picturesque fashion akin to Scotland Yard, and thus great value is added to the outline. The terminal piers already mentioned are pierced with pedimental and columned windows on the fifth floor, the architectural surrounds projecting with pleasing effects and forming a good finish to the pilastered treatment just alluded to. There is a range of 33 dormers in the high-pitched and hipped lead-covered roof, all pedimented alike along the river elevation, seen in sharp perspective in the capable pencil view, which is quite unlike any of the other pictorial studies sent in. The grouping of the windows towards the Horse Guards Avenue is set out in five bays, with pilastered spacings similar to that of the longer elevations. The handling of this design is much in sympathy with the London County Hall, as well as New Scotland Yard, which is an advantage. The top roof story is lighted by sky lanterns; dormers light the uppermost corridor on the "quad" side, to avoid cutting up the exterior slope too much. The total cost, at 1s. 2½d. per foot, works out at £568,761 5s. 10d.

MESSRS. PERCY ADAMS AND C. H. HOLDEN, ARCHT.
PROPOSAL

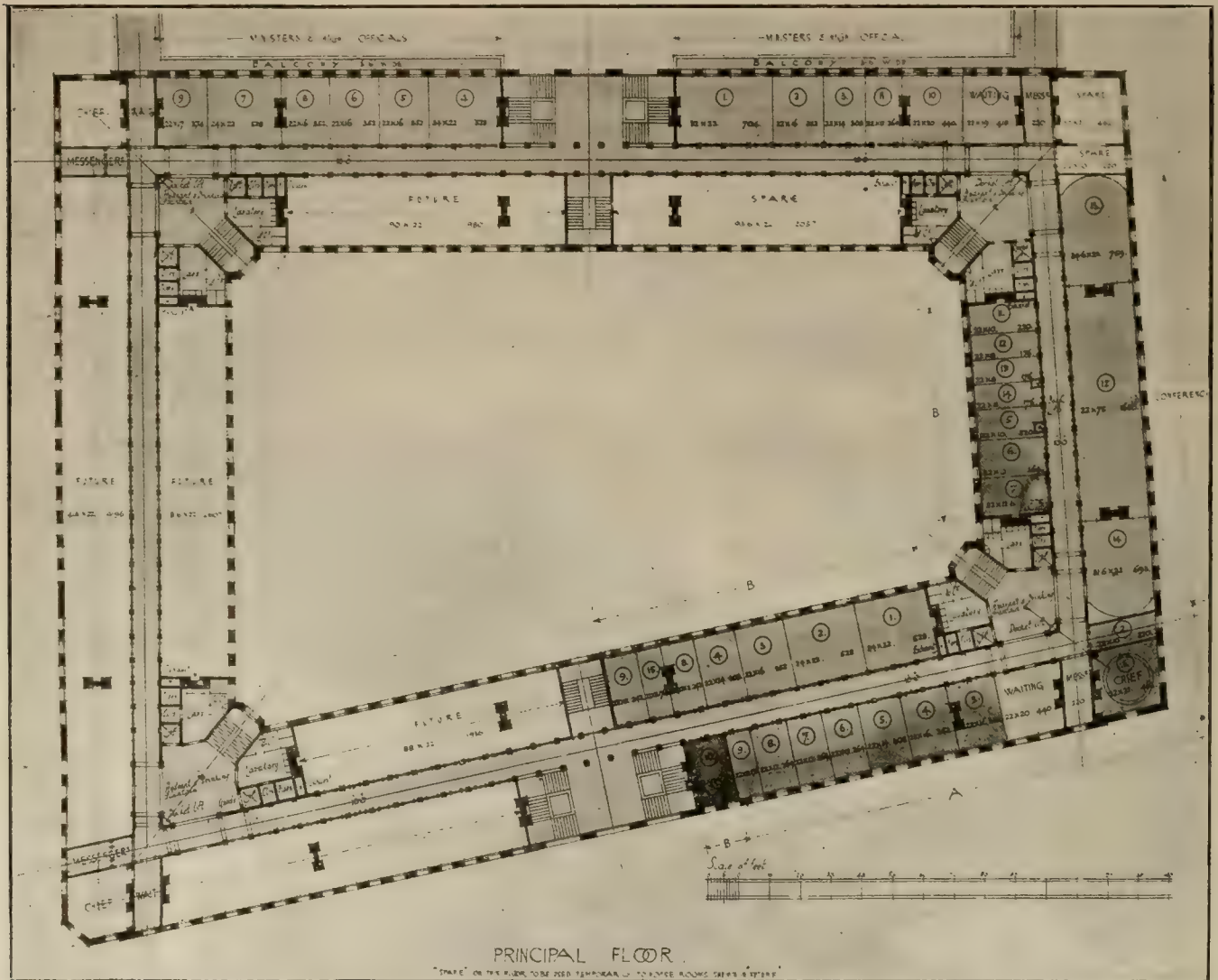
is planned round one large central courtyard, instead of being divided into two areas. The skyline of the roof is sufficiently distant in the narrowest part from side to side to allow the angle of 45deg. to be projected from the lower ground-floor level without any interference with the

light of all the windows right down from the summit to the bottom, as described. The lighting generally is extremely well devised. The longest corridors are lit at the ends, while at intermediate points they have several direct windows of their own. At the south end of the plan there is a pair of minor yards which supply ample top-lighting to the handsome main entrance

south, and have a prospect over the grounds of Montague House. The Library below these is approached from the entrance hall. All the chief officers' and the president's rooms are at this end of the building. The book-stack stores adjoin the library. On their south side two "waiting-rooms," belonging to some neighbouring department, are divided off from

finished as an oil painting, and this is reproduced with our other illustrations to-day.

MESSRS. H. V. ASHLEY AND WINTON NEWMAN have produced a most excellent plan, with a somewhat diminished central court, surrounded by a group of seven minor ones, and this plan provides direct light to all



BOARD OF TRADE NEW OFFICES, VICTORIA EMBANKMENT, S.W.: PRINCIPAL FLOOR PLAN.

Selected Design by Mr. E. VINCENT HARRIS, F.R.I.B.A., Architect.

hall carried up through two floors, thereby increasing its importance. These twin courts are like two others similarly planned at the northern end of the buildings. The landings, adjacent passages, and staircases are lit by their means. The lavatories, etc., are also ventilated, floor above floor, by these areas. All departmental rooms have a direct light, whether from the central open space or from the exterior of the whole block. The authors have adopted a segmental fan-like lay-out, which culminates with its northern frontage along the Horse Guards Avenue on the curve. A pair of entrances mark the Whitehall Gardens side of the building, which is permanently blocked from view by the Banqueting Hall in Whitehall; but as these main doorways happen to come at each end, they can be seen well beyond the limits of all intervening obstructions. There are two exit doorways corresponding on the east elevation, giving easy ways to the Terrace and Gardens in a line with the National Liberal Club. A third portal is in the centre of the segmental elevations on the north. The conference rooms on the first floor face the

the book-stack rooms by screens, which perhaps are low: otherwise artificial light would be necessary. There are seven staircases. Four stand in the extremities of the building, and a pair come half-way along the east and west corridors. The larger one at the north end overlooks the central court, and by these means sunshine would permeate the premises where it is most needed. This design embodies a notable architectural feature, a crowning colonnaded attic comprising the two top-most floors, for the same reason realised in the selected scheme. The detail certainly looks more English than some of the other designs. The handling of the frontages is dignified, and presents a sufficiently palatial effect without extraneous efforts, such as projecting pavilions and pedimented end treatments inevitably involve. Instead of such arbitrary additions which do not naturally grow out of the internal contrivances of a uniform vast office building like this must be. Messrs. Adams and Holden's proposal relies on a sense of breadth due to the massing of wall surfaces disposed with much dexterity. The perspective is unusual, being

the corridors. The lay-out is masterly, and allows external lighting from vertical windows to all the offices and working rooms, either from the big middle "quad," or, as in most instances, from outside the building. The staircases are lighted from the smaller courts, which likewise ventilate and light the lavatory adjuncts. It is to be noted that the central open space is very much longer from N. to S. than it is from E. to W., whereas the proportions in other plans occur the other way about, the wider dimensions being set across the site. The Library is particularly well managed in this design, flanked by its complementary stack-room along the south front overlooking the grounds of the Duke of Buccleuch's mansion. The conference rooms face the "quad," while the President of the Board of Trade's suite commands the prospect of the Thames highway and Embankment gardens. The elevations have slight projections situate towards the ends of the two main fronts. In the N. and S. fa-ades corresponding pavilions make fine central features, and mask the deviation of the Northern frontage in a handsome and clever way,

giving really a fanlike form to the contour of the building, which counts for much seen from the Horseguards Avenue, and particularly from the Embankment. The chief entrance would be prominently conspicuous viewed from Whitehall south of the extremity of the United Service Institution. The entrance-hall or vestibule is handled in a suitable fashion for the

facades follow straight lines, save that he cuts off the corners, and locates the two correspondingly important entrances on the west in the splay at the extremities of the Whitehall Gardens frontage. Immediately facing these portals are placed apsidal-ended entrance vestibules, leading to their adjacent grand staircases. All this is well managed, and

chief points where possible. The lavatory conveniences are well managed within the air-space of the large internal yards. Both the east and west long line of corridors possess their individual external windows. There are five openings leading direct on to the terrace, below which are to be laid out the formal gardens. This scheme is both straightforward and workmanlike. The



BOARD OF TRADE NEW OFFICES, VICTORIA EMBANKMENT, S.W.: PRINCIPAL FLOOR PLAN.

Design by Messrs. H. PERCY ADAMS, F.R.I.B.A., and C. H. HOLDEN, A.R.I.B.A., Architects.

Board of Trade chef-d'œuvre. The adjacent staircases, with spacious landings, are square in the setting-out, and they are well handled, as effective as they are commodious. The skyline is marked by a mansard-looking sort of roof, filled with many dormers, and the topmost corridor has clerestory lantern-lights. The pavilions already alluded to end with attics as crowning features. Below are shown big pilastered piers, handsomely managed above the rusticated base of the building, which is carried above the first-floor level. Projecting architraves and rusticated surrounds to some of the first and second-floor windows add a relief to the monotony of the windows, made up as such a building must be of very many floors all approximately of equal height and uniformity. The chimneys seen above the ridge-line help this design by emphasising the distribution of its masses below.

MR. EDWIN COOPER,

who has a very large perspective and a fine set of drawings, adheres to the conditions and shape of the land in the lay-out of his scheme, which is a clever one, and his

much elaboration of ceiling and mural contrivance adds a very recherché effect. On the Embankment facade smaller splay are introduced, softening off the termination points of this largely-handled composition, distinguished by an architectural centrepiece of five enriched handsome pilasters of a Composite order extending through three floors in height. A wrought-iron fronted balcony above on the top of the bold, masterful main cornice extends right round the building. The very lofty frieze accommodates a range of square windows, and these openings are interspersed with shaped consoles to add structural support to the oversailing masonry above. The attic includes two more floors, and the building is covered by a big French-looking roof sparkling with thirty-three dormers set in a row with flat coverings. The planning of Mr. Cooper's scheme is disposed round a pair of big internal courts, obtaining good light. In this plan the corridors of the cross premises depend for the greater part on borrowed lights. End windows and fine ingressed stairways considerably augment the light, and other lights are added at some of the

lifts are near by the entrances and yet are placed so that they do not obtrusively assert themselves.

MESSRS. ROBERT ATKINSON AND GEORGE ALEXANDER'S DESIGN.

In some respects a likeness is discernible between this last solution of the problem and the plans submitted by Messrs. Robert Atkinson and George Alexander, though the two designs differ essentially. The entrances are identical at the ends of Whitehall Gardens front. Less space, however, is sacrificed to capacious vestibules, and a simply-treated oval serves as a lobby leading immediately to staircases facing the doorways from the street. Lifts occur to the right and left. All the six staircases are planned on the diagonal at the corners of the big internal courts, thereby giving direct light to the corridors at the angles. Otherwise these passages depend on borrowed light. Corridor windows are furnished on the external elevations by employing bronze-framed fenestration, extending through three floors, and rising from floor to ceiling in each story. These openings are situated

between broad, bold piers of masonry, after the fashion seen in some commercial buildings recently put up in the Kingsway. The effect shown by this competition design suggests that a vast lofty hall of assembly is provided in the middle of the building, necessitating galleried windows, and when the bronze framings oxidise, as already seen in Sir John Burnet's "Kodak" premises in the same thoroughfare, the result at a distance resembles vast unbroken voids between wall piers. It would scarcely be possible to devise a more ample allowance of glass. Beyond that, however, largeness of handling also results from the able way in which this scheme has been realised. The perspective is specially well managed, emphasising the severity on which the designers have depended. A capital basement furnishes part of their scheme below the interior courts. The absence of attached features, combined with a reliance on an unbroken skyline, illustrate the merits of horizontal mass.

MESSRS. CHARLES GASCOYNE AND
GEORGE NOTT

cut off the acute corner of the site at the N.W. point, and this splay immediately impinges upon the pedimented pavilions, which are repeated elsewhere towards the extremities of the other elevations. Their big entrances are set on the boundary line of Whitehall Gardens and the more important of the two is situate near its southern end, leading into an uncommonly handsome entrance saloon flanked by segmental staircases leading to the principal floor. Two ample courts allow of good lighting, and the Library is located in the far east angle of the south quad on the ground-floor level in a sequestered spot, above which the authors have placed one of the "Old Rooms." The longitudinal corridors have external windows; but the transverse ones rely on borrowed lights. The stairs look utilitarian in style, and are ample in number. Architecturally this scheme is notified by complacent reserve enlivened by a touch of picturesqueness. The windows are dressed with shafts and pediments interspersed with plain ones. Some are divided by transoms which occur between the fourth and fifth stories level with the floors. The pedimented pavilions are rather too much subordinated, and in effect are unequal to the importance of the columns in the same parts of the elevations. The convoy of chimneys bristling against the sky gives a contrast to other designs without any. From the plans of this design, it is not easy to understand how these stacks are actually to be built. The end ones, which are very big-looking, appear to rise over the return corridor on the main floors, and would be built above a void.

MR. C. T. ARMSTRONG

has a most meritorious scheme, which happens to harmonise remarkably well with the block of offices erected for the Woods and Forests in Whitehall. The plan is quite different to all the rest, because the author considered that any symmetrical facade to the West must be obscured by the Banqueting-hall. The lay-out adopted disposes of the northern end in Whitehall-gardens by planning it at a right angle with the front facing the Horse Guards Parade. By this means a broad treatment is presented in full sight of the great highway between Parliament-square and Charing Cross. At the south end of the same side Mr. Armstrong puts the principal entrance first to be built. This design marks the positions of the entrances by projections, which repeat on the east side towards the river, and likewise furnish the centrepiece on the north front. There are four lighting courts, the smaller pair being exclusively employed for corridors and lavatory air and light.

Facing both the entrances are four main staircases, and besides these are three others. The conference rooms overlook the gardens of Montague House, and the President's room and Chief Secretary's Department command the Thames. The lifts work in the wells of stairways. The scheme is well considered and is quite one of the best submitted.

MESSRS. PERCY THOMAS, ERNEST PRESTWICH,
AND IVOR JONES,

of Cardiff and Leigh, send a capital set of drawings, showing a fine elevational treatment, surmounted by a stone-faced attic in lieu of an exposed roof. The Horse Guards Avenue elevation runs out to an acute angle at the end of Whitehall Gardens. The terminations elevationally are rusticated in a tower-like manner right up to the frieze of the crowning cornice. The walling to the ground stage and first floor sets forward in differing splays, battered outwards, all being rusticated, and the principal floor windows have arched heads kept to scale in good taste, the whole massing sturdily as a plinth. The result is handsome, and the scheme is characteristic of the purpose of the building. The chief entrance occurs in the middle of the west side, as in the selected design. The second portal is situate half-way along the north elevation. Passing through the front door, the visitor would enter a big cortile in the centre, its proportions being extended two floors high. On either hand are the twin grand stairways. Corridors run along the exterior of this great hall. This curtailment makes the hall appear somewhat elongated; but this effect is considerably modified on the principal floor, because the extra width above the corridors is employed as an open gallery. The Library adjoins a well-lit pair of stack-rooms, with the officers' rooms for this department. Big projecting oriels are carried out to add size and importance to the main-floor rooms above. Perhaps in reality their overshadowing to the rooms below might not be so objectionable as it looks. It does not strike one as good construction to erect the wall of a seven-storied building over a void above the Library with its stack and attendant rooms.

MESSRS. A. G. HORSNELL AND A. H.
BROWNRIGG'S

dashingly-handled perspective shows obelisks at either end of the river-garden front. The west elevation is curved, and has the chief entrance at the south end, leading to a sumptuous cortile as an approach to the grand stairs, making for a most sumptuous effect, which is wasteful in contrast to the chosen scheme. The conference rooms face north, looking into the quad, where there is a cruciform-shaped library set in the middle, while other encroachments off the E. and W. sides go up to the sixth floor. The old crypt is ingeniously preserved in this plan by being put in a curve-shaped internal area, of which there are several others, one of these, owing to the segmental front in Whitehall gardens, being extremely narrow. The lay-out is much over-featured and cut up in a grandiose way, though the lighting is adroitly contrived, if doubtful in sufficiency for so tall a structure. The exterior has a pair of turrets as accessories to the end pavilions of the Embankment frontispiece, and the design is bold, handsome, and capable. Windows pierce the frieze, adding to the restlessness of the architecture, which is wanting in breadth.

MESSRS. H. T. BUCKLAND AND E. HAYWOOD
FARMER

have adopted a central entrance for their scheme behind the old Chapel Royal. It gives a stately approach to the west side by a semicircular cortile, which is attached

to a grand central corridor leading to the east wing; but the termination of this approach is traversed by the cross corridor, and so it has no vista. The Library is placed in the southern quad, and on the north of this connecting corridor, going E. and W., are two spare rooms in the northern quad. The President of the Board of Trade has his room over the reading-room, and this central block, standing in the midst of the lighting area, goes up three floors high. The stack-room in the basement under this block is badly lit by areas at both ends. The four cardinal corners of the entire building are deeply recessed, and have enormous windows, which look out of scale externally. They serve to light the corridors, behind the angles of which are waiting-rooms with rounded ends, connected with nothing in particular except the messengers' quarters. To the rear, in the angles of the quad, are octagonal rooms quaintly worked in to fit the different gradients of line set by the site. Two staircases occur right and left of the main entrance, and others in a similar way are provided in the east wing. One more staircase is drawn facing the Horse Guards Avenue entrance. The lay-out generally of this plan is workmanlike, and the scheme has good points. The uppermost floors, however, are set back in a stone-faced attic above the main cornice-line, and this front wall stands over a void, and being near 30ft. high it rests on girders, with bearings only on thin cross-walls, which, in turn, are supported over voids below. A central pediment marks the middle of the river facade, and ten chimneys break the sky-line of this rusticated and redundant design. The sombre-looking perspective brings out the conflicting scale of the great windows to the east, and at the recessed corners of the building with their detrimental effect.

ARCHITECTURAL ACOUSTICS.*

By WALLACE C. SABINE, Sc.D.

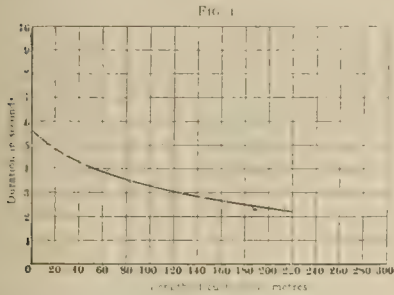
Dean, the Graduate School of Applied
Science, Harvard University.

The problem of architectural acoustics is complex. In order that hearing may be good in any auditorium it is necessary that the sound should be sufficiently loud, that the simultaneous components of a complex sound should maintain their proper relative intensities, and that the successive sounds in rapidly moving articulation, either of speech or music, should be clear and distinct. Scientifically the problem involves three factors—reverberation, interference, and resonance. As an engineering problem it involves the shape of the auditorium, its dimensions, and materials.

Reverberation includes as a special case the echo. The term "echo" will be reserved for that particular case in which a short, sharp sound is distinctly repeated by reflection, either once, from a single surface, or several times, from two or more surfaces. In the general case of reverberation we are concerned only with the rate of the decay of sound. In the special case of the echo we are concerned not merely with its intensity, but with the interval of time elapsing between the initial sound and the moment it reaches the observer. In the room mentioned as the occasion of this investigation no discrete echo was distinctly perceptible, and the case will serve excellently as an illustration of the more general type of reverberation. After preliminary gropings, first in the literature, and then with several optical devices for measuring the intensity of sound, all established methods were abandoned. Instead, the rate of decay was measured by measuring what was inversely proportional to it—the duration of audibility of the reverberation, or, as it will be called here, the duration of audibility of the

* From a recent paper presented to the Franklin Institute, and reproduced from its "Journal."

residual sound. These experiments may be explained to advantage here, for they will give more clearly than would abstract discussion an idea of the nature of reverberation. Broadly considered, there are two, and only two, variables in a room—shape (including size) and materials (including furnishings). In designing an auditorium an architect can give consideration to both; in repair work for bad acoustic conditions it is



Curve showing the relation of the duration of the residual sound to the added absorbing material.

generally impracticable to change the shape, and only variations in materials and furnishings are allowable. This was, therefore, the line of work in this case. It was evident that, other things being equal, the rate at which the reverberation would disappear was proportional to the rate at which the sound was absorbed. The first work, therefore, was to determine the relative absorbing power of various substances. With an organ-pipe as a constant source of sound, and a suitable chronograph for recording, the durability of audibility of a sound after the source has ceased in this room when empty was found to be 5.62 seconds. All the cushions from the seats in Sanders Theatre were then brought over and stored in the lobby. On bringing into the lecture-room a number of cushions, having a total length of 8.2 metres, the duration of audibility fell to 5.33 seconds. On bringing in a total length of 17 metres of cushions the sound in the room after the organ-pipe ceased was audible for but 4.94 seconds. Evidently the cushions were strong absorbents and rapidly improving the room, at least to the extent of diminishing the reverberation. The result was interesting, and the process was continued. Little by little the cushions were brought into the room, and each time the duration of audibility was measured. When all the seats (436 in number) were covered, the sound was audible for 2.03 seconds. Then the aisles were covered, and then the platform. Still there were more cushions—almost half as many more. These were brought into the

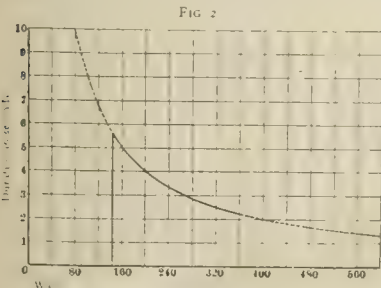
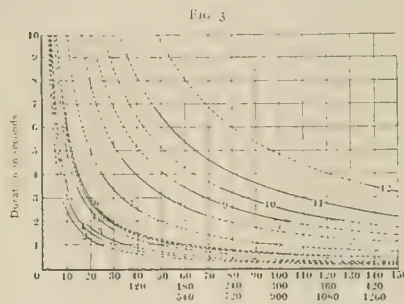


FIG. 2

Curve 5 plotted as part of its corresponding rectangular hyperbola. The solid part was determined experimentally; the displacement of this to the right measures the absorbing power of the walls of the room.

room a few at a time, as before, and draped on a scaffolding that had been erected around the room, the duration of the sound being recorded each time. Finally, when all the cushions from a theatre seating nearly fifteen hundred persons were placed in the room—covering the seats, the aisles, the platform, the rear wall to the ceiling—the duration of audibility of the residual sound was 1.14 seconds. This experiment, requiring, of course, several nights' work, having been completed, all the cushions were removed, and the room was in readiness for

the test of other absorbents. It was evident that a standard of comparison had been established. Curtains of chenille, 1.1 metres wide and 17 metres in total length, were draped in the room. The duration of audibility was then 4.51 seconds. Turning to the data that had just been collected, it appeared that this amount of chenille was equivalent to 30 metres of Sanders Theatre cushions. Oriental rugs (Herez, Demirjik, and Hindoo-stanee) were tested in a similar manner, as were also cretonne cloth, canvas, and hair-felt. Similar experiments, but in a smaller room, determined the absorbing power of a man and of a woman, always by determining the number of running metres of Sanders Theatre cushions that would produce the same effect. This process of comparing two absorbents by actually substituting one for the other is laborious, and it is given here only to show the first steps in the development of a method. Without going into details, it is sufficient here to say that this method was so perfected as to give not merely relative, but absolute, coefficients of absorption. In this manner a number of coefficients of absorption were determined for objects and materials which could be brought into and removed from the room, for sounds having a pitch an octave above middle C. In



The curves of Figs. 8 and 9 entered as parts of their corresponding rectangular hyperbolas. Three scales are employed for the volumes, by groups 1-7, 8-11, and 12.

the following table the numerical values are the absolute coefficients of the absorption:

Oil paintings, inclusive of frames	.28
Carpet rugs	.20
Oriental rugs, extra heavy	.29
Cheese-cloth	.019
Cretonne cloth	.15
Shelf curtains	.23
Hair-felt, 2.5cm. thick, 8cm. from wall	.78
Cork, 2.5cm. thick, loose on floor	.16
Linoleum, loose on floor	.12

When the objects are not extended surfaces, such as carpets or rugs, but essentially spacial units, it is not easy to express the absorption as an absolute coefficient. In the following table the absorption of each object is expressed in terms of a square metre of complete absorption:

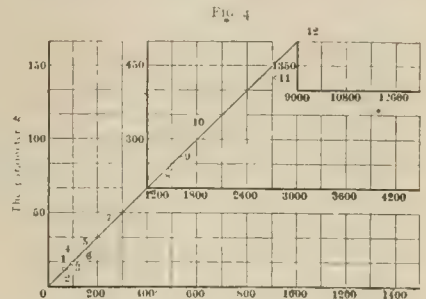
Audience, per person	.44
Isolated woman	.51
Isolated man	.48
Plain ash settees	.039
Plain ash settees, per single seat	.0077
Plain ash chairs, "bent wood"	.0082
Upholstered settees, hair and leather	1.10
Upholstered settees, per single seat	.28
Upholstered chairs similar in style	.30
Hair cushions, per seat	.21
Elastic-felt cushions, per seat	.20

Of even greater importance was the determination of the coefficient of absorption of floors, ceilings, and wall surfaces. The accomplishment of this called for a very considerable extension of the method adopted. If the reverberation in a room as changed by the addition of absorbing material be plotted, the resulting curve will be found to be a portion of an hyperbola with displaced axes. An example of such a curve, as obtained in the lecture-room of the Fogg Art Museum, in Cambridge, is plotted in the adjacent diagram (Fig. 1). If, now, the origin of this curve is displaced, so that the axes of co-ordinates are as asymptotes of the rectangular hyperbola, the displacement of the origin measures the initial absorbing power of the room, its floors, walls, and ceilings. Such experiments were carried out in a large number of rooms in which the different component materials entered in very different degrees, and an

elimination between these different experiments gave the following coefficient of absorption for different materials:

Open window	1.000
Wood-sheathing (hard pine)	.061
Plaster on wood-lath	.034
Plaster on wire-lath	.033
Glass, single thickness	.027
Plaster on tile	.025
Brick set in Portland cement	.025

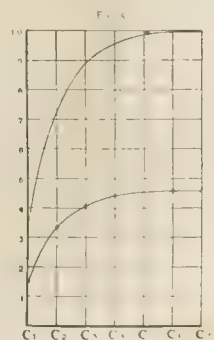
If the experiments in these rooms are plotted in a single diagram, the result is a



The parameters, k , plotted against the volumes of the rooms, showing the two proportional.

family of hyperbolas, showing a very interesting relationship to the volumes of the rooms. Indeed, if from these hyperbolas the parameter, which equals the product of the co-ordinates, be determined, it will be found to be linearly proportional to the volume of the room. These results are plotted in Fig. 4, showing how strict the proportionality is even over a very great range in volume. We have thus at hand a ready method of calculating the reverberation for any room, its volume and the materials of which it is composed being known.

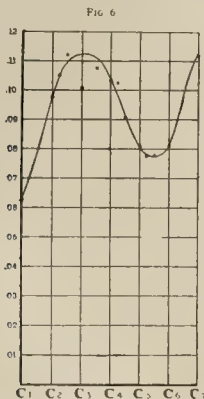
The first five years of the investigation were devoted to violin C, the C an octave above middle C, having a vibration frequency of 512 vibrations per second. This pitch was chosen because, in the art of telephony it was regarded at that time as the characteristic pitch determining the conditions of articulate speech. The planning of Symphony Hall in Boston forced an extension of this investigation to notes over the whole range of the musical scale, three octaves below and three octaves above violin C. In the very nature of the problem, the most important datum is the absorption coefficient of an audience, and the determination of this was the first task undertaken. By means of a lecture on one of the recent developments of physics, wireless telegraphy, an audience was thus drawn together, and at



The absorbing power of an audience for different notes. The lower curve represents the absorbing power of an audience per person. The upper curve represents the absorbing power of an audience per square metre as ordinarily seated. The vertical ordinates are expressed, in terms of total absorption by a square metre of surface. For the upper curve the ordinates are thus the ordinary coefficients of absorption. The several notes are at octave intervals, as follows:—C₁ 64, C₂ 128, C₃ (middle C) 256, C₄ 512, C₅ 1024, C₆ 2048, C₇ 4096.

the end of the lecture requested to remain for the experiment. In this attempt the effort was made to determine the coefficients for the five octaves from C₁ 64 to C₇ 4096, including notes E and G in each octave. For several reasons the experiment was not a success. A threatening thunderstorm made the audience a small one, and the sultriness of the atmosphere made open windows necessary, while the attempt to cover so many

notes, thirteen in all, prolonged the experiment beyond the endurance of the audience. While this experiment failed, another the following summer was more successful. In the year that had elapsed the necessity of carrying the investigation further than the limits intended became evident, and now the experiment was carried from C₆₄ to C₄₀₉₆, but included only the C notes—seven notes in all. Moreover, bearing in mind the experiences of the previous summer, it was recognised that even seven notes would come dangerously near overtaxing the patience of the audience. Inasmuch as the coefficient of absorption for C₅₁₂ had already been determined six years before, in the investigations mentioned, the coefficient for this note was not redetermined. The experiment was, therefore, carried out for the lower three and the upper three notes of the seven. The audience, on the night of this experiment, was much larger than that which came the previous summer, the night was a more comfortable one, and it was possible to close the windows during the experiment. The conditions were thus fairly satisfactory. In order to get as much data as possible, and in as short a time, there were nine observers stationed at different points in the room. These observers, whose kindness and skill it is a pleasure to acknowledge, had prepared themselves by previous practice for this one experiment. The results of the experiment are shown on the lower curve in Fig. 5. This curve gives the coefficient of absorption per person. It is to be observed that one of the points falls clearly off the smooth curve drawn through the other points. The observations on which this point is based were, however, much dis-

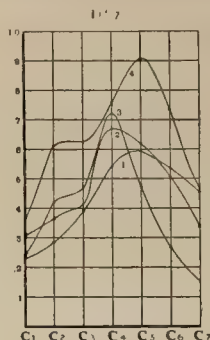


The absorbing power of wood sheathing, two centimetres thick, North Carolina pine. The observations were made under very unsuitable conditions. The absorption is here due almost wholly to yielding of the sheathing as a whole, the surface being shellacked, smooth, and non-porous. The curve shows one point of resonance within the range tested, and the probability of another point of resonance above. It is not possible now to learn as much in regard to the framing and arrangement of the studding in the particular room tested as is desirable. C₅ (middle C) 256.

turbed by a street car passing not far from the building, and the departure of this observation from the curve does not indicate a real departure in the coefficient, nor should it cast much doubt on the rest of the work, in view of the circumstances under which it was secured. Counteracting the, perhaps, bad impression which this point may give, it is a considerable satisfaction to note how accurately the point for C₅₁₂, determined six years before by a different set of observers, falls on the smooth curve through the remaining points. In the audience on which these observations were taken there were 77 women and 105 men. The courtesy of the audience in remaining for the experiment and the really remarkable silence which they maintained are gratefully acknowledged.

The next experiment was on the determination of the absorption of sound by wood sheathing. It is not an easy matter to find conditions suitable for this experiment. The room in which the absorption by wood sheathing was determined in the earlier experiments was not available for these. It was available then only because

the building was new and empty. When these more elaborate experiments were under way the room became occupied, and in a manner that did not admit of its being cleared. Quite a little searching in the



The absorbing power of cushions. Curve 1 is for "Sanders Theatre" cushions of wiry vegetable fibre, covered with canvas ticking and a thin cloth. Curve 2 is for "Brooks House" cushions of long hair, covered with the same kind of ticking and plush. Curve 3 is for "Appleton Chapel" cushions of hair, covered with ticking and a thin leatherette. Curve 4 is for the elastic felt cushions of commerce, of elastic cotton, covered with ticking and short nap plush. The absorbing power is per square metre of surface. C₅ (middle C) 256.

neighbourhood of Boston failed to discover an entirely suitable room. The best one available adjoined a night lunch-room. The night lunch was bought out for a couple of nights, and the experiment was tried. The work of both nights was much disturbed. The traffic past the building did not stop until nearly two o'clock, and began again at four. The interest of those passing on foot throughout the night, and the necessity of repeated explanations to the police, greatly interfered with the work. This detailed statement of the conditions under which the experiment was tried is made by way of explanation of the irregularity of the observations recorded on the curve, and of the failure to carry this particular line of work further. The first night seven points were obtained for the notes C₆₄ to C₄₀₉₆. The reduction of these results on the following day showed variations indicative of maxima and minima, which, to be accurately located, would require the determination of intermediate points. In the experiment the following night points were determined for the E and G notes in each octave between C₁₂₈ and C₂₀₄₈. Other points would have been determined, but time did not permit. It is obvious that the intermediate points in the lower and in the higher octave were desirable, but no pipes were to be had on such short notice for this part of the range, and in their absence the data could not be obtained. In the diagram, Fig. 6, the points lying on the vertical lines were determined the first night. The points lying between the vertical lines were determined the second night. The accuracy with which these points fall on a smooth curve is, perhaps, all that could be expected in view of the difficulty under which the observations were conducted and the limited time available. One point in particular falls far off from this curve, the point for C₂₅₆, by an amount which is, to say the least, serious, and which can be justified only by the conditions under which the work was done. The general trend of the curve seems, however, established beyond reasonable doubt. It is interesting to note that there is one point of maximum absorption, which is due to resonance between the walls and the sound, and that this point of maximum absorption lies in the lower part, though not in the lowest part, of the range of pitch tested. It would have been interesting to determine, had the time and facilities permitted, the shape of the curve beyond C₄₀₉₆, and to see if it rises indefinitely, or shows, as is far more likely, a succession of maxima.

The experiment was then directed to the determination of the absorption of sound by cushions, and for this purpose return was made to the constant-temperature room.

Working in the manner indicated in the earlier papers for substances which could be carried in and out of a room, the curves represented in Fig. 7 were obtained. Curve 1 shows the absorption coefficient for the Sanders Theatre cushions, with which the whole investigation was begun ten years ago. These cushions were of a particularly open grade of packing, a sort of wiry grass or vegetable fibre. They were covered with canvas ticking, and that, in turn, with a very thin cloth covering. Curve 2 is for cushions borrowed from the Phillips Brooks House. They were of a high grade, filled with long, curly hair, and covered with canvas ticking, which was, in turn, covered by a long-nap plush. Curve 3 is for the cushion of Appleton Chapel, hair covered with leatherette, and showing a sharper maximum and a more rapid diminution in absorption for the higher frequencies, as would be expected under such conditions. Curve 4 is probably the most interesting, because for more standard commercial conditions ordinarily used in churches. It is to be observed that all four curves fall off for the higher frequencies, all show a maximum located within an octave, and three of the curves show a curious hump in the second octave. This break in the curve is a genuine phenomenon, as it was tested time after time. It is perhaps due to a secondary resonance, and it is to be observed that it is the more pronounced in those curves that have the sharper resonance in their principal maxima.

In both articulate speech and in music

FIG. 8



Distribution of intensity on the head level in a room with a barrel-shaped ceiling, with centre of curvature on the floor level.

the source of sound is rapidly and, in general, abruptly changing in pitch, quality, and loudness. In music one pitch is held during the length of a note. In articulate speech the unit, or element of constancy, is the syllable. Indeed, in speech it is even less than the length of the syllable, for the open vowel sound which forms the body of a syllable usually has a consonantal opening and closing. During the constancy of an element, either of music or of speech, a train of sound-waves spread spherically from the source, just as a train of circular waves spreads outwards from a rocking boat on the surface of still water. Different portions of this train of spherical waves strike different surfaces of the auditorium, and are reflected. After such reflection they begin to cross each other's paths. If their paths are so different in length that one train of waves has entirely passed before the other arrives at a particular point, the only phenomenon at that point is prolongation of the sound. If the space between the two trains of waves be sufficiently great, the effect will be that of an echo. If there be a number of such trains of waves thus widely spaced, the effect

will be that of multiple echoes. On the other hand, if two trains of waves have travelled so nearly equal paths that they overlap, they will, dependent on the difference in length of the paths which they had travelled, either reinforce or mutually destroy each other.

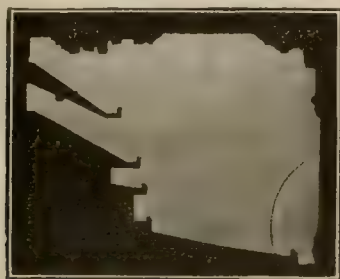


Fig. 9.

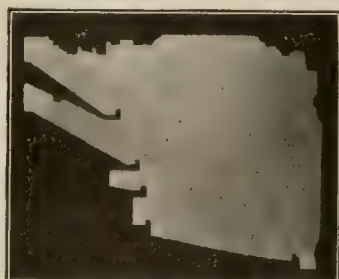


Fig. 11.



Fig. 10.

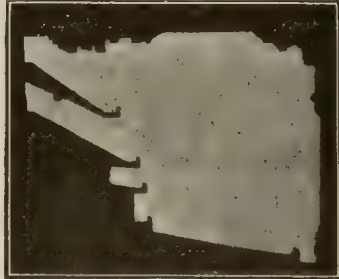


Fig. 12.

Just as two equal trains of water-waves crossing each other may entirely neutralise each other if the crest of one and the trough of the other arrive together, so two sounds, coming from the same source, in crossing each other may produce silence. This phenomenon is called interference, and is a common phenomenon in all types of wave-motion. Of course, this phenomenon has its complement. If the two trains of water-waves so cross that the crest of one coincides with the crest of the other, and trough with trough, the effects will be added together. If the two sound-waves be similarly retarded, the one on the other, their effects will also be added. If the two trains of waves be equal in intensity, the combined intensity will be

Connecticut, is shown in the accompanying chart. The room experimented in was a simple, rectangular room, with plain side walls and ends, and with a barrel or cylindrical ceiling. The result is clearly represented in Fig. 8, in which the intensity of the sound has been indicated by contour lines in the manner employed in the drawing of the geodetic survey maps. The phenomenon indicated in these diagrams was not ephemeral, but was constant so long as the source of sound continued, and repeated itself with almost perfect accuracy day after day. Nor was the phenomenon one which could be observed merely instrumentally. To an observer moving about in the room it was quite as striking a phenomenon as the dia-

bilaterally symmetrical, but not symmetrical about the transverse axis.

When a source of sound is maintained constant for a sufficiently long time, a few seconds will ordinarily suffice: the sound becomes steady at every point in the room. The distribution of the intensity of sound under these conditions is called the interference system, for that particular note, of the room or space in question. If the source of sound is suddenly stopped, it requires some time for the sound in the room to be absorbed. This prolongation of sound after the source has ceased is called reverberation. If the source of sound, instead of being maintained, is short and sharp, it travels as a discrete wave, or group of waves about the room, reflected from wall to wall, producing echoes. In the Greek theatre there was ordinarily but one echo, "doubling the case-ending," while in the modern auditorium there are many, generally arriving at a less interval of time after the direct sound, and, therefore, less distinguishable, but stronger, and, therefore, more disturbing.

The formation and the propagation of echoes may be admirably studied by an adaptation of the so-called "schlieren-Methode" device for photographing air disturbances. It is sufficient here to say that the adaptation of this method to the problem in hand consists in the construction of a model of the auditorium to be studied to proper scale, and investigating the propagation through it of a proportionally scaled sound-wave. To examine the formation of echoes in a vertical section, the sides of a model are taken off and, as the sound is passing through it, it is illuminated instantaneously by the light from a very fine and somewhat distant electric spark. In the accompanying illustrations, reduced from the photographs, the enframing silhouettes are shadows cast by the model, and all within are direct photographs of the actual sound-wave and its echoes. The four photographs show the sound and its echoes at different stages in their propagation through the room, the particular auditorium under investigation being the New Theatre in New York. It is not difficult to identify the master wave and the various echoes which it generates, nor, knowing the velocity of sound, to compute the interval at which the echo is heard.

To show the generation of echoes and their propagation in a horizontal plane, the ceiling and floor of the model are removed and the photograph taken in a vertical direction. The photographs shown in Figs. 13 to 16 show the echoes produced in the horizontal plane passing through the marble parapet in front of the box.

While these several factors—reverberation, interference, and echo—in an auditorium at all complicated are themselves complicated, nevertheless they are capable of an exact solution, or, at least, of a solution as accurate as are the architect's plans in actual construction. And it is entirely possible to calculate in advance of construction whether or not an auditorium will be good, and, if not, to determine the factors contributing to its poor acoustics and a method for their correction.

At Tuesday's meeting of the city council of Bristol, the docks committee notified the death, on Jan. 7, of the docks engineer, Mr. W. W. Squire. The committee recommended the appointment as engineer of Mr. Thomas Arthur Peace at a commencing salary of £1,000, rising by annual increments of £100 to £1,200 per annum. Mr. Squire's salary was £1,500. Mr. Peace was appointed as assistant engineer under the late Mr. McCurrah in March, 1898, and he also acted as deputy-engineer under the late Mr. Squire. After considerable discussion the report was adopted, and Mr. Peace was formally appointed.

The third pipe conveying water from Thirlmere to Manchester is now in use. The cost of it has been £1,067,974. The city is drawing 30,000,000 gallons a day from Thirlmere.

The Chester-le-Street Urban District Council has decided to proceed with its scheme for the erection of 196 houses, and has just let the contract for the first fifty to Mr. John Douglass, Newcastle, for £10,360.



Fig. 13.

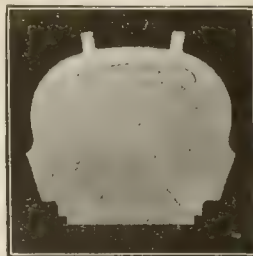


Fig. 15.



Fig. 14.

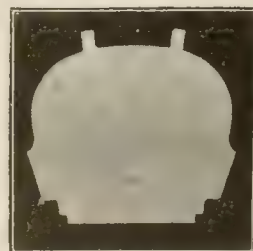


Fig. 16.

quadruple that of either of the trains separately, as above explained, or zero, depending on their relative retardation. The effect of this phenomenon is to produce regions in an auditorium of loudness and regions of comparative or even complete silence. It is a partial explanation of the so-called deaf regions in an auditorium.

It is not difficult to observe this phenomenon directly. It is difficult, however,

grams suggest. At the points in the room indicated as high maxima of intensity in the diagram the sound was so loud as to be disagreeable, at other points so low as to be scarcely audible. It should be added that this distribution of intensity is with the source of sound at the centre of the room. Had the source of sound been at one end and on the axis of the cylindrical ceiling, the distribution of intensity would still have been

Corrente Calamo.

We congratulate the Government, the assessors, and its author on the design selected for the new Board of Trade Offices, which we illustrate this week, and which will be found fully described in our first article. We cannot, however, conceive why it has been determined to postpone the erection of the building. We were assured six months ago that the Government intended to do all in its power to facilitate the continuance of all work of the kind within its jurisdiction, and we have welcomed more than one proof that it was keeping its promise. Why so much-needed an addition to our public buildings is not to be proceeded with we utterly fail to understand. The Department it is to house needs the accommodation badly, and will need it more and more if, as we have been led to believe, its energies are to be expanded, with the view of fostering and increasing British trade. The cost, which will be spread over a period which we trust will outlast the war, is hardly to be mentioned in comparison with the huge expenditure necessitated by the war, little of which will ever be recouped, we fear. Employment in the more skilled branches of the building trade is none too general. Other industries seem likely to be more or less directly financed out of national funds, and every consideration, in our opinion, emphasises the necessity for early reconsideration of the unwelcome determination to postpone this much-needed building.

The Postmaster-General wishes to call the attention of architects to the importance of making adequate arrangements in the plans of large buildings for the installation at a later stage of telephone equipment. Failure to do so leads to complaints, owing to the inevitable interference with the structure and decorations of the buildings and the noise caused by piercing walls and floors. It also delays the installation of the telephone and increases the costliness of the work involved. In these circumstances it is to the advantage of all concerned to make adequate provision for telephone, as well as for light, water, and other services, in designing a building, and it has occurred to the Postmaster-General that members of the profession may be glad to have some information as regards the accommodation required for this purpose. For the telephone service of a large building provision should be made, as a minimum, for one 3in. pipe from the public footway to the basement or ground floor and for cables to the other floors. It is also desirable that there should be a ready means of leading wires to the various rooms on the different floors. The precise requirements vary according to circumstances, but they can be definitely ascertained in any particular instance from the local Post Office engineer, whose address may be obtained at the nearest telegraph office.

There have been so few sales of property lately that it seems unlucky to get into litigation when one of these good things comes along. It is especially unfortunate where there was really nothing in the point fought over, except, of course, as a matter of law-costs. In a recent case (*Times*, Feb. 8) the plaintiff, a lady, had agreed to buy a certain property at Staplehurst for £635 from a

third party, for whom as vendor, and who was another lady, the defendants were acting as agents. The formal contract provided, as is quite usual, that the deposit of £63 10s. should be paid by the plaintiff as purchaser to the defendants, "as agents for the vendor and stakeholders." The contract also contained the usual promise that if the vendor could, or would, not make out a clear title, the contract could be rescinded by her and the deposit returned. The sale was rescinded under this clause; but when the plaintiff claimed her money back again the defendants pleaded that they had received it as agents for the vendor only, and could not repay it without her consent. It was a pretty little quarrel, with possibilities, and to make it more lively the defendant brought in the vendor as third party. But Mr. Justice Lush quickly blew up all the defences. The defendants were stakeholders, and so agents for both vendor and purchaser. Therefore, the plaintiff, as purchaser, had the right to have her money returned when the proposed sale fell to pieces. Then the Judge heard evidence as to defendants' claim against the vendor, as third party, and found there was nothing in it. So the agents pay costs all round in this little three-cornered game of law; but the three teams of lawyers engaged are alone quite contented.

We are glad to note that the second annual Pottery and Glass Fair is to be held, notwithstanding the war. It will open at Stoke-on-Trent next Monday, and will close on Saturday, Feb. 27. The first fair, last year, was certainly a success. Till then the outside world knew the Potteries chiefly by the names of a handful of big firms. There are hundreds of firms in the Potteries; scores of them are doing work that is just as good as the work of the world-famous firms, but, naturally, at lower prices. It is to these rising firms that the fair is of most value, and it is as an introduction to the work of these rising firms that the fair chiefly interests the outer world. The first half of the 19th century was not a period of great technical progress; but towards 1850 came a revival. For one thing, sanitation came to be taken up more vigorously by the engineers, and the more progressive potters set before themselves the task of making in pottery pieces of such size and stability as should suit the requirements of the sanitary engineers. To-day there are some 300 pottery firms in the district, and in spite of severe foreign competition North Staffordshire still holds the highest place in the markets of the world for quality and craftsmanship. In the last few years the era of applied science has definitely begun. The research and testing work at the new technical school at Stoke are highly significant of what is coming. The Pottery Fair itself is the symbol of a new ideal of co-operation and concerted effort which is displacing the excessive individualism and narrow jealousies of the past.

There are still a good many streets in the Metropolitan boroughs where the scavenging contrasts badly with the prompt and businesslike fashion in which it is effected in the City. In one some public-spirited inhabitant might with advantage have kept "Ruskin Day"—last Monday—not far from the same district in which he set out to prove that "the speedy abolition of all abolishable filth is the first process of education." To

this end, and by way of exemplification Ruskin undertook to keep certain streets between the British Museum and St. Giles cleaner than the public authorities did. The work began by Ruskin himself taking broom, and by putting on his gardener's foreman over a gang of three other sweepers. These swept for eight hours daily, "to show a bit of our London streets kept as clean as the deck of a ship of the line." It is that motor-buses and wood pavements were then among our afflictions!

Under the provisions of the New Zealand Institute of Architects Act, the opportunity for Registration of architects expired on November 22, and henceforth no person who has failed to register will have the right to attach the words "Registered architect" to his name when practising in New Zealand. To secure this official endorsement of qualifications as an architect it is necessary to sit for an examination. The New Zealand public, remarks our contemporary, "*N.Z. Building Progress*," will in future be protected from the pretensions of unskilled people who assume qualifications they do not possess. Anyone who pays for architectural services has only to keep his eyes open to insure that his adviser is properly qualified.

The Lord Justice Clerk and Lords Salvesen, Guthrie, and Skerrington, sitting at Second Division of the Court of Session at Edinburgh on Friday, gave decision in a singular will dispute. Miss Catherine McCaig, of Oban, who died in 1913, left directions to her trustees to erect within the McCaig Tower, a well-known, uncompleted erection on a ridge overlooking Oban, eleven bronze statues of her father, mother, brothers, and sisters, including one of her brother Peter, who died in infancy. Each statue was to cost not less than £1,000. Directions were given also by the testator for certain work to be executed in the tower which was built at a cost of £5,000 by her brother. The value of the estate was about £30,000, and certain beneficiaries, whose annuities were to be postponed until the statues were erected, now challenged the validity of the will. The Court held that the directions in question were wholly void, having neither reason nor public sentiment in their favour, and involving sheer waste of money. Evidently people who wish to erect statues to their relatives had better do so during their own lifetime!

Mr. F. O. Stafford, of the Local Government Board, held an inquiry at Warrington on Monday into an application by the corporation in connection with a scheme for widening and improving the Market Gate and Sankey-street, Warrington. This is part of a scheme for the improvement of the centre of the town, and will involve the demolition of two hotels—the Blackburne Arms and the Pelican—the market hall (erected in 1855), and large drapery premises. A portion of the improvement has already been carried out.

An arbitration commenced in the New British Station Hotel, Edinburgh, on Monday, and has continued during the week, between the Dundee, Perth, and London Shipping Company, Ltd., and the corporation of Dundee in connection with the compulsory acquisition by the corporation for the purposes of the Improvements and Tramways Act, 1913, of property belonging to the Shipping Company situated at Nos. 5 and 6, Shore-terrace, at Findal's Wynd, Dundee. Mr. T. P. Marshall, architect, Edinburgh, is arbiter for claimants, and Mr. Frank Burnet, architect, Glasgow, with Mr. John Wilson, K.C., as opponent, and Mr. T. M. Mackay, S.S.C., clerk and legal assessor.

THE PLANNING OF HOUSES.

At the Birmingham University, Mr. Barry Parker, F.R.I.B.A., has given a lecture on house-planning. Some of the students are, as an exercise, preparing plans for the layout of a piece of land selected for that purpose, and were feeling their knowledge of house-planning insufficient for the task. The lecturer began by giving a short summary of the evolution of the English house, beginning with the earliest forms of human habitation of which we have any record. He then gave a series of typical modern house plans, beginning with those costing, say, about £2,000, and going down a scale of diminishing cost until he came to the quite small cottage, showing how, in every type of house, the actual conditions laid down by the site, by considerations of aspect and prospect, and the specific requirements of the future occupants of the house, must be the controlling factors in its planning.

The lecturer also drew attention to the way the hall was again coming to assume a more important place in the house plan, but said that modern architects thought it could be made to do this merely by its being increased in size, whereas it could only usefully do this if it were so arranged that the traffic through it from room to room or from room to stairs, or from these to the front door, was rigidly confined to one corner of this apartment, leaving the rest free from traffic and cold currents of air, and, therefore, comfortable to sit in. Coming down to cottages of the smallest type, such as are built in blocks, he gave the essential elements of the problem to be solved, as provision of shelter, comfort, and privacy. He advised all who proposed to study the problems which the designing of such dwellings presented to do so with an open mind, prepared to find their own solution to them, and, having done so, to study the solutions of them others had arrived at; but not to begin by taking the solutions arrived at by others and considering what modifications of them might be suggested. The day, he said, surely could not be far distant when local authorities, in addition to requiring for each cottage a minimum air-space, would require for each living-room, at any rate, a reasonable minimum amount of sunshine, and that, at least, by-laws would prohibit the building of cottages with their living-rooms facing north. He strongly deprecated the projecting back premises so common in cottage property, and showed how this feature could be completely eliminated, even on sites on which the architect was prevented from increasing the width of frontage given to each cottage.

The Bishop of Southwark dedicated on Wednesday evening St. Paul's Clergy House, which has been erected in High-street, Deptford, at a cost of £4,000.

A standing joint committee is being formed in connection with the National Board of Conciliation in the Building Trades to deal exclusively with demarcation disputes.

An application has been made by the Birmingham City Council to the Local Government Board, under Part II. of the Housing and Town Planning Act, 1909, for their approval of a town-planning scheme with reference to certain lands situate partly within the city and partly within the rural district of Evesham, and entitled "The North Yardley and Lechford Town Planning Scheme." A Local Government Board inquiry will be held into the application on Thursday in next week at the council-house, Birmingham, before Mr. Raymond Inwin, F.R.I.B.A.

At the town-hall, Sheffield, on Friday, Mr. M. North, an inspector under the Local Government Board, held an inquiry into an application by the city council for sanction to the borrowing of £6,965 for the erection of a chapel (to seat 10), an entrance lodge, registrar's residence and officers, etc., in connection with the proposed new cemetery at Abbey-lane. Alderman Howles explained the urgency of the need for additional burial-ground in Sheffield, the nearest cemetery in that district—Norton—rapidly filling. A second application was for borrowing of £50 for the provision of additional bowling-grounds at Abbeyfield Park and Bole Hills recreation-ground.

Our Illustrations.

BOARD OF TRADE NEW OFFICES COMPETITION.

We follow up our announcement giving the result of this important competition last Friday, to-day, by illustrating the selected design, with a review of the ten schemes submitted in this final contest. We have had some difficulty, we confess, in discovering any sort of principle upon which the choice of these particular proposals could have been based. Some of them hardly furnish a solution of the real problems involved, and the fashion of a Soane Medallion competition is emulated in one or two cases by the get-up of the designs. The success of Mr. E. Vincent Harris, the winner, is consequently made more conspicuous than it otherwise might have been; but we must endorse the award, after examining all the other nine plans. The objection urged by some with regard to the borrowed light of the corridors in this scheme on the upper floors, which we have heard described as being a fatal contravention of the conditions, is, after all, rather a question of degree. The author has made provisions which appear to us sufficient, seeing that direct light is obtained from every end of these corridors by special windows (as suggested in the conditions) as well as from the four big angle-set stairways, while half-way along the greater corridors a direct light is insured from the intermediate staircases, with windows into the great middle court. These openings certainly might be enlarged with advantage. No question can arise on this point as regards the two main floors, where the staircases are so much more commodious and spacious. The increase of light by widening the upper stairs is only a matter of detail, and would traverse no principle of the lay-out. The merits otherwise of the chosen scheme, judged as a whole, certainly surpass those of the remaining designs, and our illustrations will elucidate these conclusions. One double-page to-day is devoted to Mr. Harris's perspective pencil view and block plan. Another sheet includes the Victoria Embankment elevation and longitudinal section through the great quadrangle, also the ground-floor plan. The principal floor plan appears with the text. The capable scheme, which we regard as a good second-best in this competition, is by Messrs. H. Percy Adams and C. H. Holden, so we have included herewith a photograph of their oil-colour perspective picture, taken from a point of view across the Thames. The inset plate includes the geometrical drawing of the same façade, which is further explained by a copy of the $\frac{1}{4}$ in. scale detail. The cross-section shows how the stone-built attic is meant to be carried, as we presume, by cantilevers built-in lower down in the main walls. It displays also the line of direct light, projected at an angle of 45deg. to the lower ground floor in the narrowest width of this big tall area. The plans given illustrate the two chief floors. We intend to give similar illustrations next week of some of the other designs, of which we have taken special photographs.

THE ASSESSORS' AWARD.

The text of the award of the assessors in the final competition in connection with these buildings is as follows:—

1, New-court, Temple, E.C.,
Jan. 6, 1915.

In accordance with your instructions, we have carefully considered the ten sets of designs submitted in the final competition for this building.

In our opinion, alterations of importance would have to be made before any of the designs submitted, including the one we have selected, could be successfully carried into execution.

While fully alive to certain defects in the selected design, we consider that these defects can be remedied without materially altering the scheme, and we are unanimously of opinion that No. 5 is, on the whole, the best, and we therefore recommend that,

subject to the conditions of the competition, the author of No. 5 be appointed architect to the new building.

REGINALD BLOMFIELD.
ERNEST NEWTON.
ASTON WEBB.

The First Commissioner,
H.M. Office of Works.

(Note.—Mr. E. Vincent Harris is the author of Design No. 5.)

PROFESSIONAL AND TRADE SOCIETIES.

THE ARCHITECTURAL ASSOCIATION OF IRELAND.—An ordinary meeting was held on Tuesday, Feb. 2, at the rooms, 15, South Frederick-lane, Dublin. The vice-president, Mr. Frederick Hayes, F.R.I.A.I., occupied the chair, and there was a large attendance of members. Owing to the regrettable indisposition of Mr. F. E. Eden, M.A., who was thus prevented from completing his journey to Ireland, his paper, entitled "In the Footsteps of Samuel Butler," was read by the president, Mr. H. Allberry, A.R.I.B.A. The lecture dealt with the interesting series of chapels to be found at Varello, Orta, Varese, and other towns of Northern Italy, where groups of these buildings were erected as a setting for scenic representations of religious subjects, and the splendid series of explanatory lantern illustrations was followed with close attention. Mr. R. Caulfeild Orpen, R.H.A., president of the Royal Institute of the Architects of Ireland, in proposing a vote of thanks to Mr. Eden, said that although their president had done well, having regard to the short time the paper had been in his hands, they must all realise that they had missed much by the absence of the writer. It was clear he was imbued with the charm of the district of which he wrote, and his personality would have been impressed on his remarks. Prof. W. A. Scott, A.R.I.B.A., seconded the vote of thanks, which was passed with acclamation. The committee proposed two resolutions, one dealing with the remission of subscriptions from members serving with his Majesty's Forces, the other with a number of clauses in connection with the proposed entente between the English and Irish Architectural Associations.

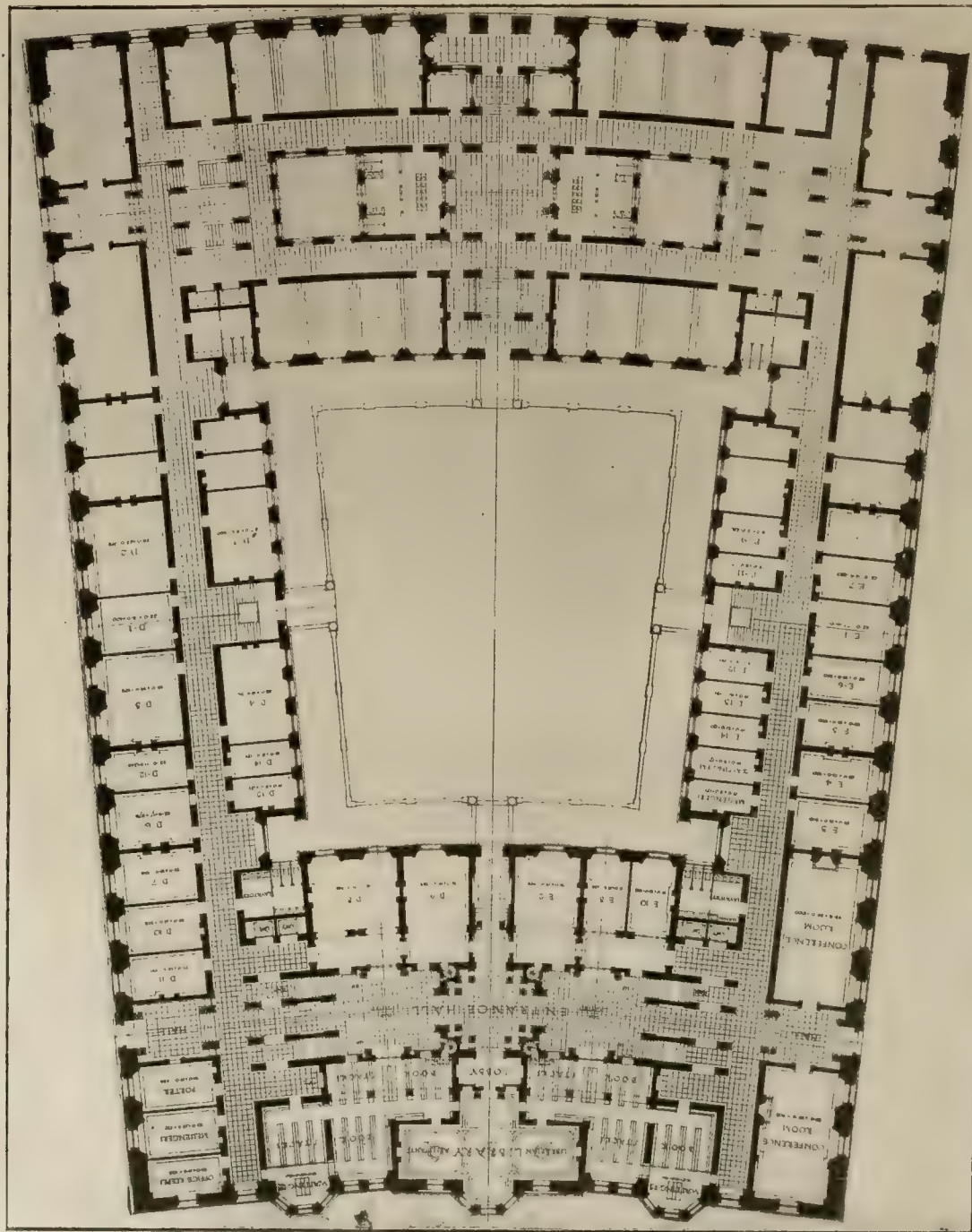
BIRMINGHAM ARCHITECTURAL ASSOCIATION.—Mr. Laurence Weaver lectured before the members of the Birmingham Architectural Association at the Royal Society of Artists' galleries, on Friday night, on "War Memorials." Mr. Weaver illustrated with the lantern all the principal types of war memorials. He pleaded throughout for a closer sympathy between the sculptor and the architect responsible for the memorials, and made it clear that in his view it was almost invariably better that the two should collaborate than that the sculptor should be his own architect. He forecasted a vast number of memorials at the end of the present war. Every church, of course, would have its memorial; and since this was the first war of which Nonconformity had approved, every chapel in the country would have it too. Not only that; but civil communities would desire to rear some memorial to the brave they had sent to the war, and every town-hall and village meeting-house would have its tablet or monument.

Mr. H. G. Warne has been appointed surveyor and sanitary inspector to the Kingswood Urban District Council.

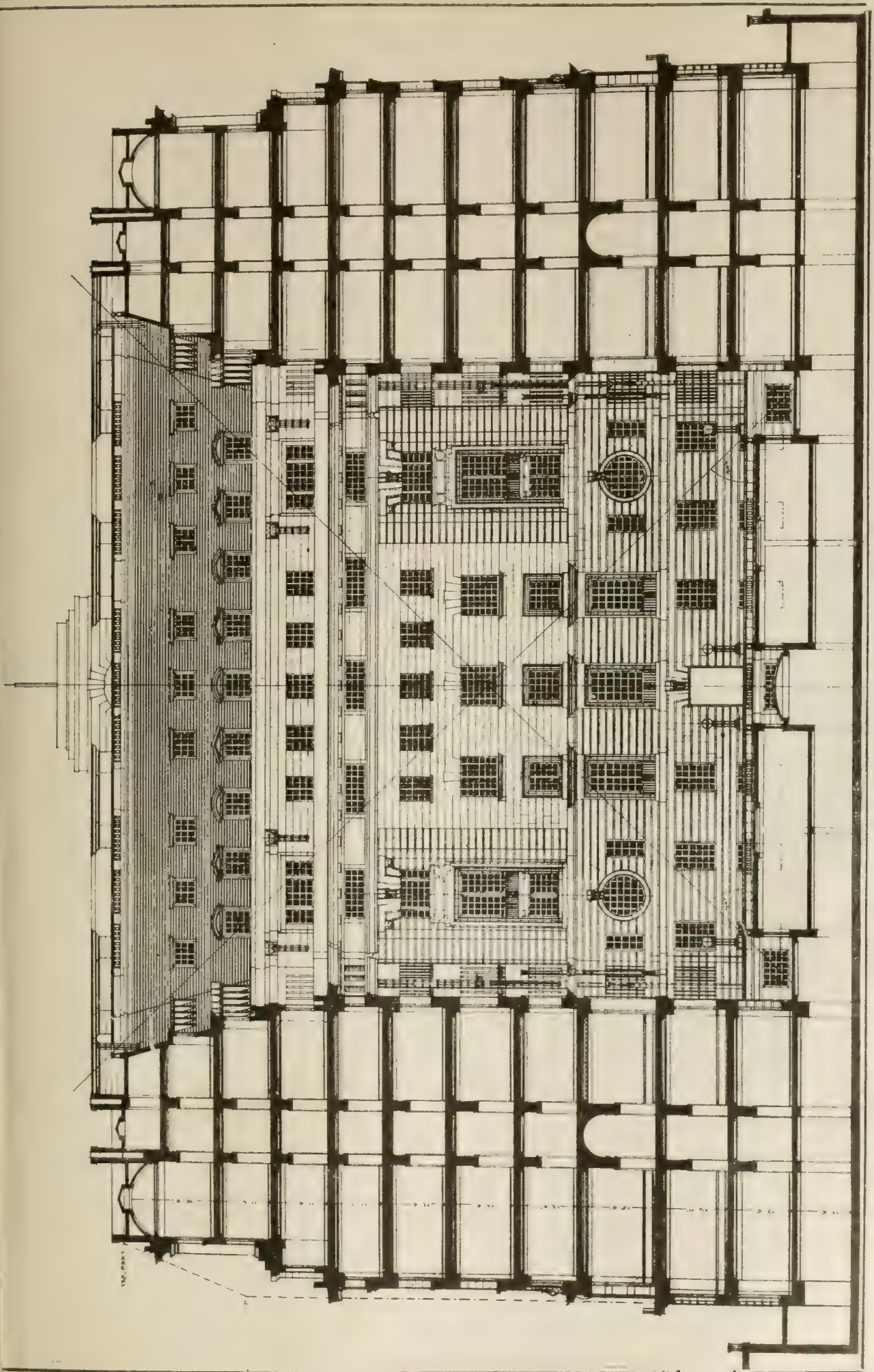
The borough council of Hammersmith have appointed Mr. Walter G. Green, A.R.I.B.A., of Acton, as architectural assistant in the borough surveyor's department, to prepare, under the direction and supervision of the borough surveyor, the drawings and specifications for the proposed extension of the town-hall.

In the course of excavations at Cyrene a colossal bronze statue of Alexander the Great has been discovered. Only the left hand of the statue—which is believed to be one of the numerous statues of the emperor recorded to have been executed by the Greek sculptor Lysippus, or a contemporary copy—is missing.

THE BUILDING NEWS, FEBRUARY 12, 1915.



BOARD OF TRADE NEW OFFICES, VICTORIA EMBANKMENT, LONDON, S.W.: CROSS SECTION AND GROUND PLAN
Design by Messrs. H. Percy Adams, F.R.I.B.A., and C. H. Holden, A.R.I.B.A., Architects.



THE LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council it was agreed to sanction an application by the Hammersmith Borough Council for the borrowing of £10,000 in connection with the borough council's electricity undertaking—viz., £416 for brick chimney, £3,449 for mains, £1,535 for transformers, switch panels, and other plant; £2,980 for house services, and £1,620 for meters.

An estimate of £315 was approved as the anticipated outlay on the printing of revised schedules of prices for architectural jobbing works and for engineering jobbing works.

With reference to the acceptance at the end of July last of the tender of W. E. Blake and Co., of Fulham, for the erection, within a period of twenty-one months, of a new sessions house at Newington, a committee reported that they had subsequently considered a proposal that bonuses should be given for the completion of the work within a shorter period. They obtained from the contractors prices for the completion of the work within alternative periods, the increase over the contract price varying from £2,000 for completion within twenty months to £13,000 for completion within twelve months. In view of the fact that a shortening of the contract period would necessitate the contractors' men working abnormal overtime and of the financial considerations resulting from the war, the committee decided not to entertain the proposal.

The Main Drainage Committee reported that Messrs. E. Bentley and Son, contractors for the construction of the Streatham and Balham storm-relief sewer, had submitted claims amounting to £9,890 16s. 3d. for extra work under the contract. The chief engineer, acting under clause 54 of the contract, allowed them a sum of £4,465 in full discharge of their claim. The total amount payable to the contractors is £33,799 13s., as compared with the amount of their tender of £34,319 2s. The committee further stated that they had been in negotiation with Messrs. G. Shellabear and Son, the contractors for the construction of the Greenwich-road branch of the southern outfall sewer, in connection with claims for damage to premises owing to the construction of the sewer. The contractors have agreed to give up the balance of the retention money, £380 0s. 3d., in full settlement and discharge of all liabilities under their contract, and the committee had accepted the offer.

A number of loans made to the Geffrye Museum of Furniture, Kingsland-road, during the past three months were reported, the most important of which are forty-one articles, valued at £1,094, lent by the Dean and Chapter of St. Paul's. Nine articles of furniture have been presented by H.M. Office of Works.

A return presented by the Housing of the Working Classes Committee showed the net additional accommodation provided during 1913 in the Greater London area, comprising the entire Metropolitan police district, and also in the County of London and in its central area. In the latter area, where working-class accommodation is diminishing, 1,658 fresh rooms were provided last year and 3,076 were demolished. In the rest of the County of London, where some working-class accommodation is still being provided, 452 fresh rooms were opened, and 3,098 were demolished, showing a net increase of only seven rooms for all districts within the Council's jurisdiction. In the extra London areas no fewer than 11,933 rooms were provided, and but 983 rooms were demolished. In the whole area within the county and Greater London, therefore, 18,114 rooms were provided, and 7,152 were demolished. In the County of London there was in 1912 a reduction of 2,623 rooms. As regards the size of the tenements provided in 1913 the new accommodation consisted mainly of two- and three-roomed tenements in Central London; two-, three-, four-, and five-roomed cottages in the rest of London; and four- and five-roomed cottages in extra-London. Of the 18,114 rooms provided in Greater London during the year, 766 were provided

by the Council, 922 by other local authorities, 1,461 by the Sutton Trustees, and 480 by the trustees of the Peabody Donation Fund. Since the expiration of the period covered by the return, the trustees of the Peabody Donation Fund have erected, or propose to erect, dwellings in Southwark and in Hammersmith, the Sutton Trustees in Rotherhithe, the Lewis Trustees in Chelsea and in Camberwell, and the Guinness Trustees in Kennington. The proportion of rates lost through "empties" in London has decreased from 5½ per cent. in 1909-10 to 3½ per cent. in 1913-14. The proportion of loss through "empties," bad debts, etc., incurred by the Metropolitan Water Board, whose area approximates to Greater London, has fallen from 6.6 per cent. in 1909-10 to 3.7 per cent. in the half-year to September, 1914. There is as yet little indication of any substantial increase in the rate of building, which has been very low for the past few years. When an improvement does take place the proportion of empty houses will probably continue to decline for some time longer. The rents charged for the new accommodation indicate that, generally, there has been very little change in London from the rents ruling for several years past. The somewhat high average for the central area in 1913 (3s. 6d.) is due to special causes, and does not indicate a general increase. The average rents in the rest of London (2s. 8d.), and in extra-London (2s. 3d.) are 1d. more and 3d. less respectively than the average for 1912. The average weekly rent per room for the districts in extra-London included in previous returns is 2s. 4d., as compared with 2s. 4½d. in 1912, 2s. 3½d. in 1911, and 2s. 1½d. in 1910. The increase shown in previous years has, therefore, not been entirely maintained.

At a meeting of the council of the University of Bristol on Friday last it was mentioned that tenders for the new buildings would shortly be asked for.

On a site in Station-road, Holsworthy, an institute has just been built. Mr. Parsons, of that town, acted as honorary architect, and the builders were Messrs. Glover and Parsons, also of Holsworthy.

A start has been made with the building of the south east branch free library for Islington. This branch will complete the system of libraries for the borough, which will consist of a central library and three branches. Messrs. Patman and Fotheringham are the contractors, and the cost of the building will be £11,500.

The interesting and suggestive paper read by Mr. T. L. Watson, F.R.I.B.A., I.A., on Dec. 21 last, before the Glasgow Institute of Architects, on "The City and Its Bridge," has been reprinted by Messrs. James Hedderwick and Sons, Ltd., St. Vincent-street, Glasgow, price 3d. Many confronted with similar problems elsewhere will be glad to obtain a copy.

Two fine drawings by Samuel Prout—one of Ulm Cathedral, and the other of the west portal of Amiens Cathedral—have been purchased for the Victoria and Albert Museum, to which has also been presented a crayon drawing, dated 1840, by Sir Edwin Landseer, for a part of his well-known picture (now among the Vernon bequest works at the National Gallery). "A Dialogue at Waterloo."

The Finchley Urban District Council have decided to proceed with the erection of 100 houses—the first portion of 300—for working men. The council have purchased an estate on the borders of Friern Barnet, and will lay it out on town planning lines. The scheme was based on a loan at 3½ per cent.; but, owing to the war, the council are not able to borrow at less than 4 per cent. In order not to raise the rents of 8s. 6d. and 7s. 6d., it has been decided to omit the baths.

The education committee of the corporation of Birmingham have appointed Mr. Alan Oxley, at present secretary of the Leicester School of Art, to a similar position at the art school under their control, at a salary of £300 a year. At the same meeting the plans were approved for the erection of a new council school in Nansen-road, Saltley, at an estimated cost of £17,815, plus £400 for the caretaker's house and £1,100 for furniture. Accommodation will be provided for 1,200 children in three departments of equal size.

OBITUARY.

We regret to learn of the death, on the 31st ult., of Mr. J. J. Smith, A.R.I.B.A., of Bideford, North Devon, a subscriber to this journal from its first issue. He has uninterruptedly carried on practice in his district, and was widely esteemed. He was surveyor to several building societies. We learn from his daughter that the succession to the practice is for disposal, as announced elsewhere in this issue, in our advt. pages. The funeral took place at Bideford Church Cemetery on Wednesday week. Mr. Smith joined the Royal Institute of British Architects as an Associate in 1882.

The death, on Feb. 1, after two days' illness, is reported of Mr. T. Woodbridge Biggs, F.S.I., Lic.R.I.B.A., M.Q.S.A., of 61, Carey-street and Hammersmith-grove, who had practised as a surveyor in the City for over forty years. He twice unsuccessfully sought a seat on the Court of Common Council, being defeated on the first occasion by only three votes. His practice was a wide and extensive one, and his keen grip of facts was appreciated in arbitration cases and disputes following the same. One of the most recent of these was the case of John Barker and Co., Ltd., v. the Hurlingham Club, which occupied a good deal of our space during 1912 and 1913, and which was successfully conducted for the plaintiffs with Mr. Woodbridge Biggs's characteristic ability. His son, Mr. W. Woodbridge Biggs, F.S.I., who has always been associated with his father, and who for some time has had control thereof in consequence of his father's ill-health, will continue to carry on the business.

Mr. R. E. Couchman, the senior partner in the firm of Messrs. Couchman and Steeds, land agents and surveyors, New-street, Birmingham, died on Sunday at his residence, 12, Vicarage-road, Edgbaston, aged sixty-seven. Mr. Couchman, who was born in 1847, had practised in Birmingham as a land agent and surveyor, for upwards of forty years. He was engaged in the management of several large estates in the Midlands and properties in Birmingham.

We much regret to record the death of Mr. W. J. Cutbill, the late chairman of Claridge's Patent Asphalt Co., Ltd., of 3, Central-buildings, Westminster, S.W., on the 27th ult. The deceased gentleman had been connected with the company for over forty years, and had largely contributed to its prosperity. Health had hindered his regular attendance lately, although he seldom missed a board meeting. He was a director of the Railway and Works Co., Ltd., which has carried out large contracts in Argentina and elsewhere in South America, and was held in high esteem in the City. The interment was at Shirley, after a funeral service at the parish church, Sydenham.

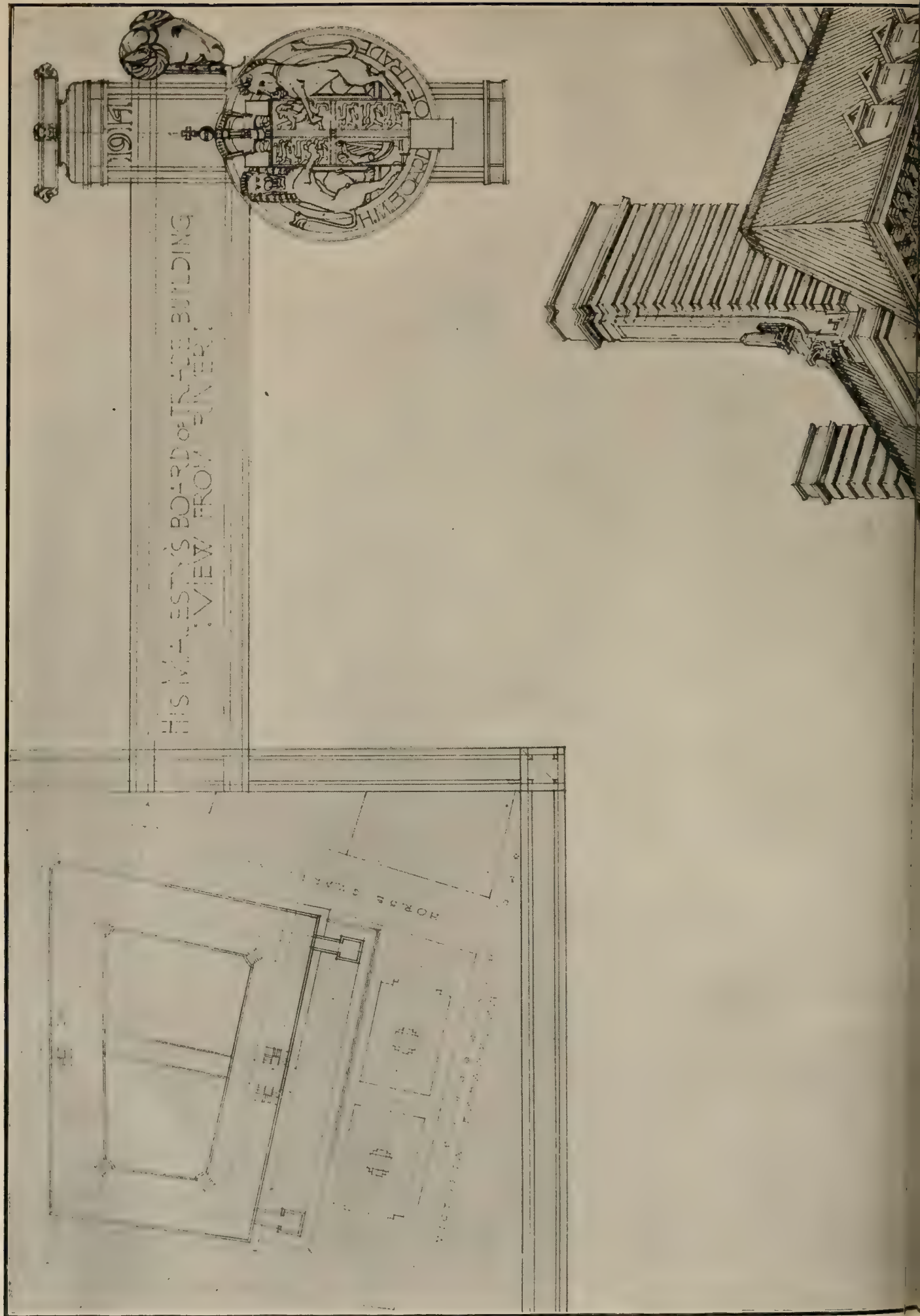
Mr. John James Moffat, the senior partner in the firm of Messrs. James Moffat and Sons, builders, Camp Hill, died on Monday, at his residence, "Jesmond," Middleton Hall-road, King's Norton. Mr. Moffat was the eldest son of the late Mr. James Moffat, the founder of the firm, and a magistrate for the city of Birmingham. For many years he had charge of the business, and fulfilled many important contracts in Birmingham and district. He rendered useful service as a prominent member of the Employers' Association. Mr. Moffat was fifty-four years of age.

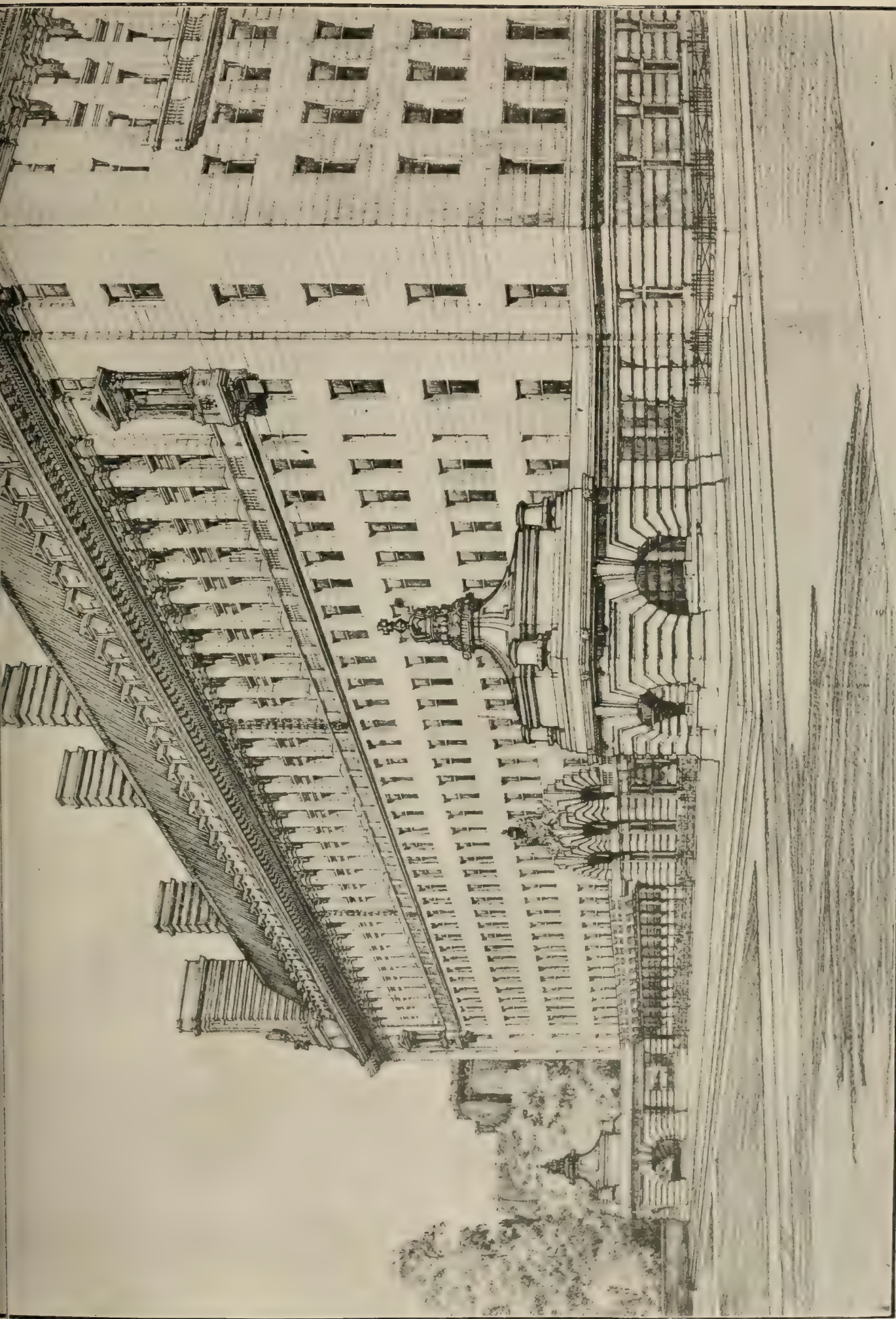
The rural district council of Winchcombe is applying to the Local Government Board for sanction to a loan of £12,867 for the purpose of carrying out a scheme of water supply to half a dozen parishes.

At a conference on housing held at Swansea last week, Alderman Morris, of that borough, mentioned that the lowest tender recently submitted for 500 houses was 20 per cent. higher than the tender for the six specimen cottages erected for his corporation six years ago.

Mr. George Pirie, contractor for public works of Aberdeen, died last week. Among the undertakings he carried out were the Brechin and Edzell Railway, the Wishaw Waterworks, railway extensions at Lesmahagow and Wemyss Bay, and the Haddingtonshire Waterworks.





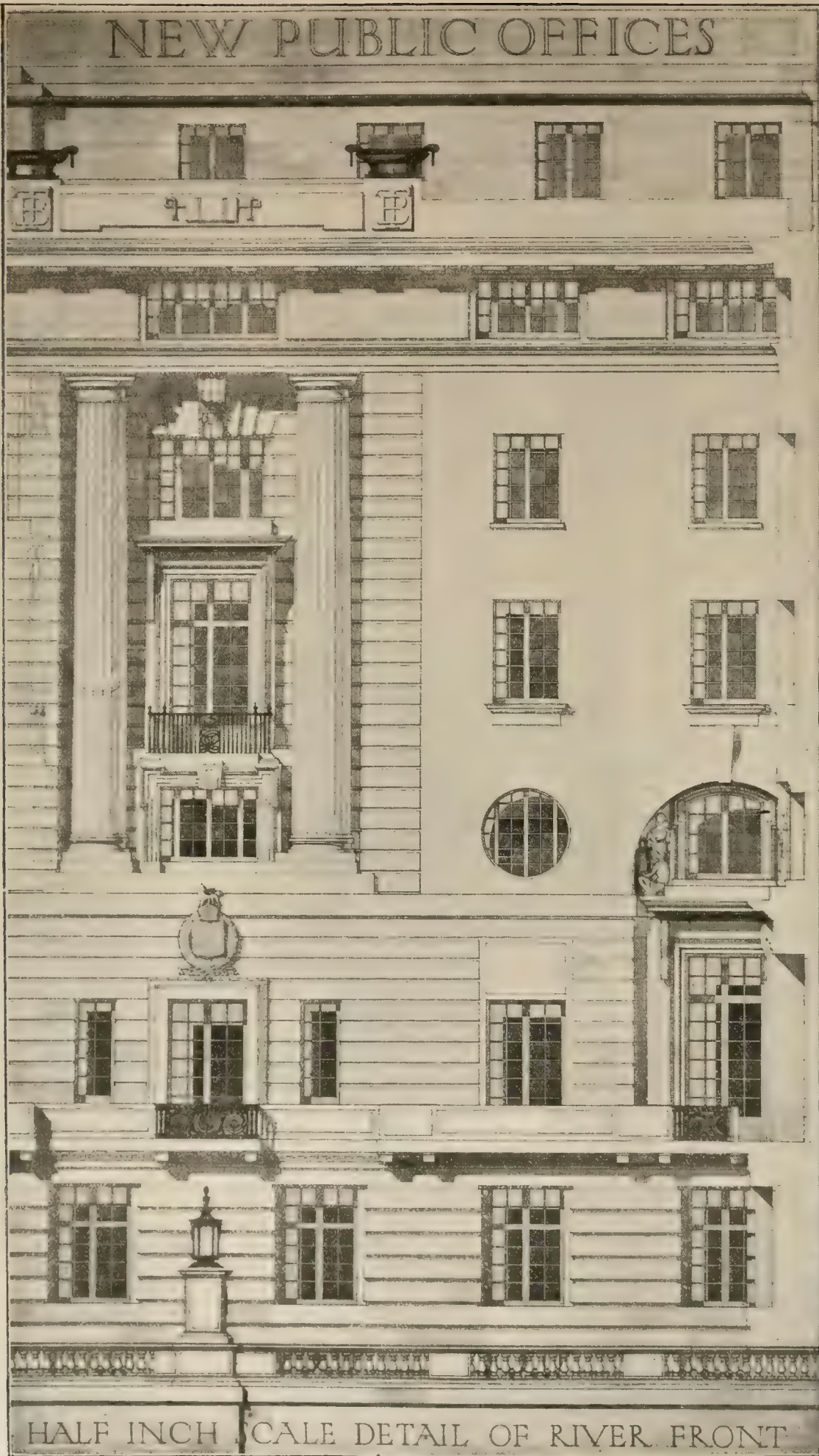


BOARD OF TRADE NEW OFFICES, VICTORIA EMBANKMENT, LONDON, S.W.

Selected Design by Mr. E. VINCENT HARRIS, F.R.I.B.A., Architect.

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BOARD OF TRADE NEW OFFICES, VICTORIA EMBANKMENT, LONDON, W

FEBRUARY 12, 1915.

NEW PUBLIC OFFICES

STATE OF NEW YORK



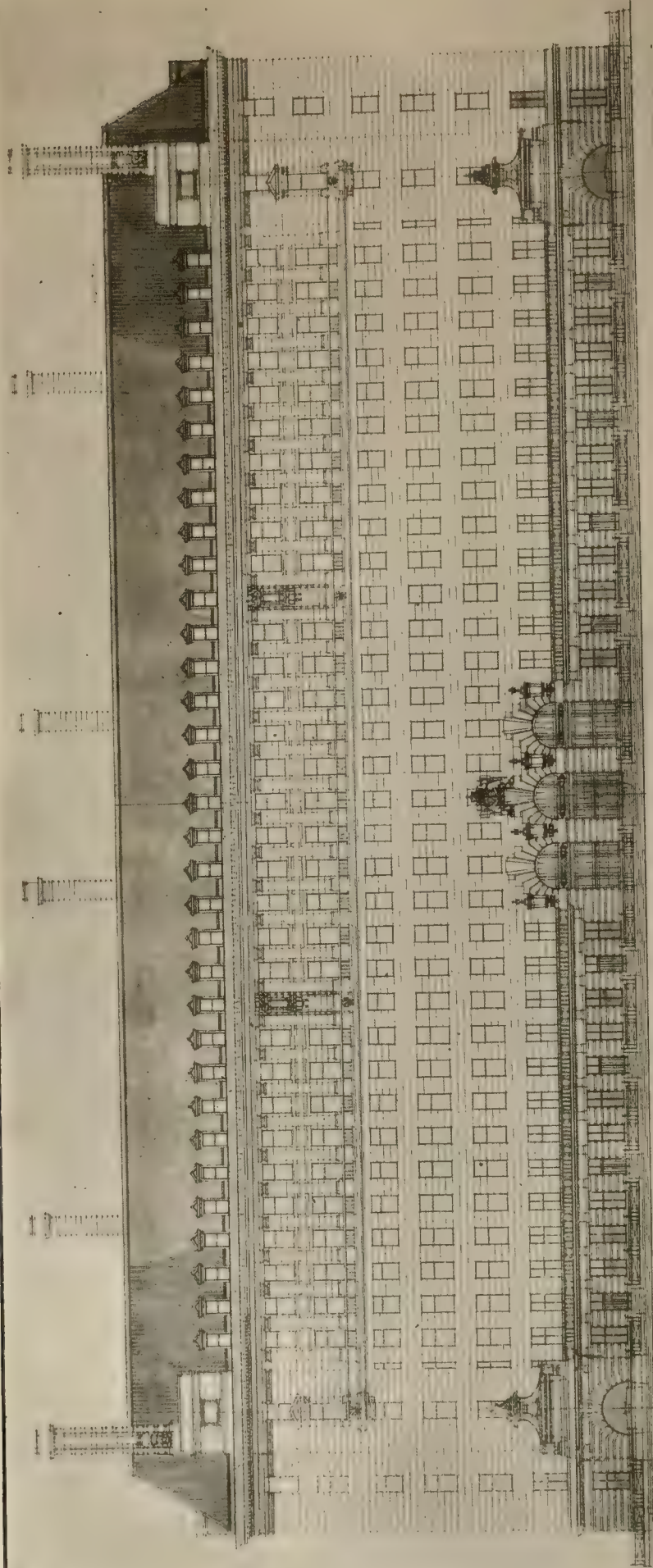
ELEVATION TO VICTORIA STREET



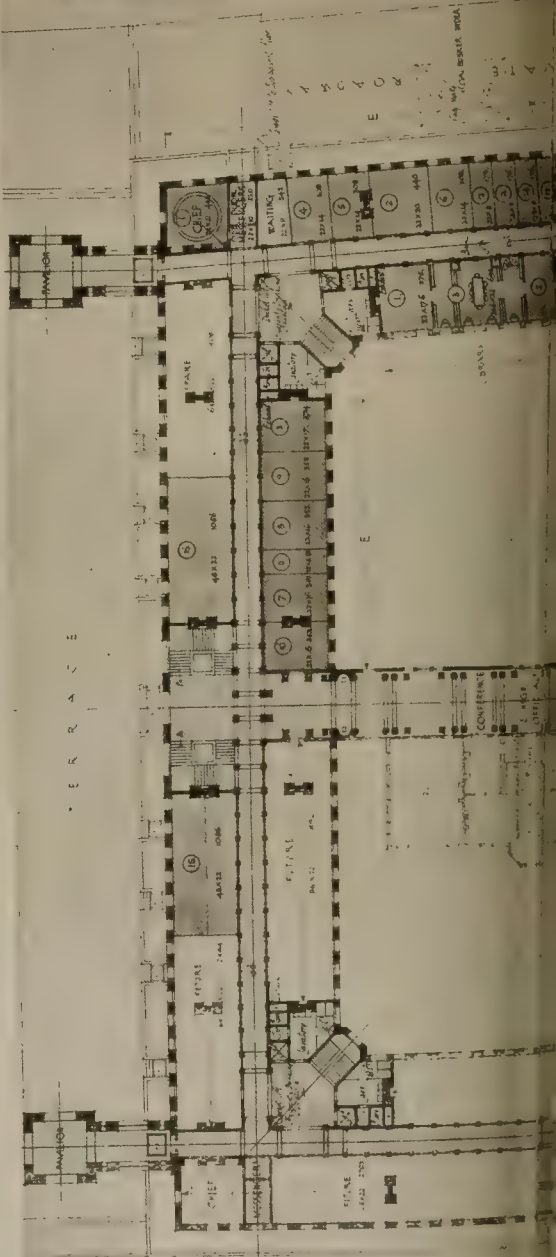
Design by Messrs. H. PERCY ADAMS, F.R.I.B.A., and C. H. HOLDEN, A.R.I.B.A., Architects.

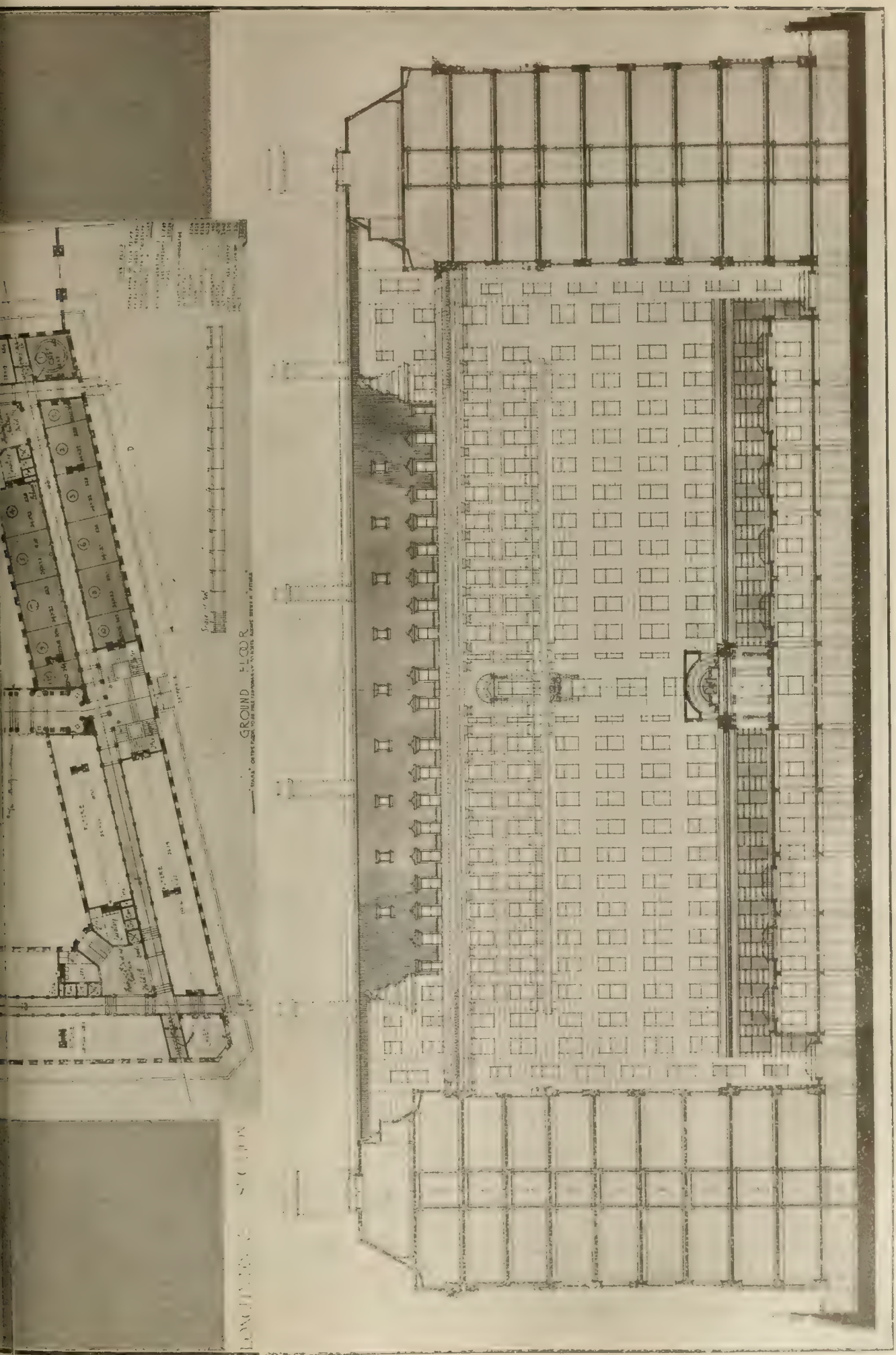


THE BUILDING NEWS, FEBRUARY 12, 1915.

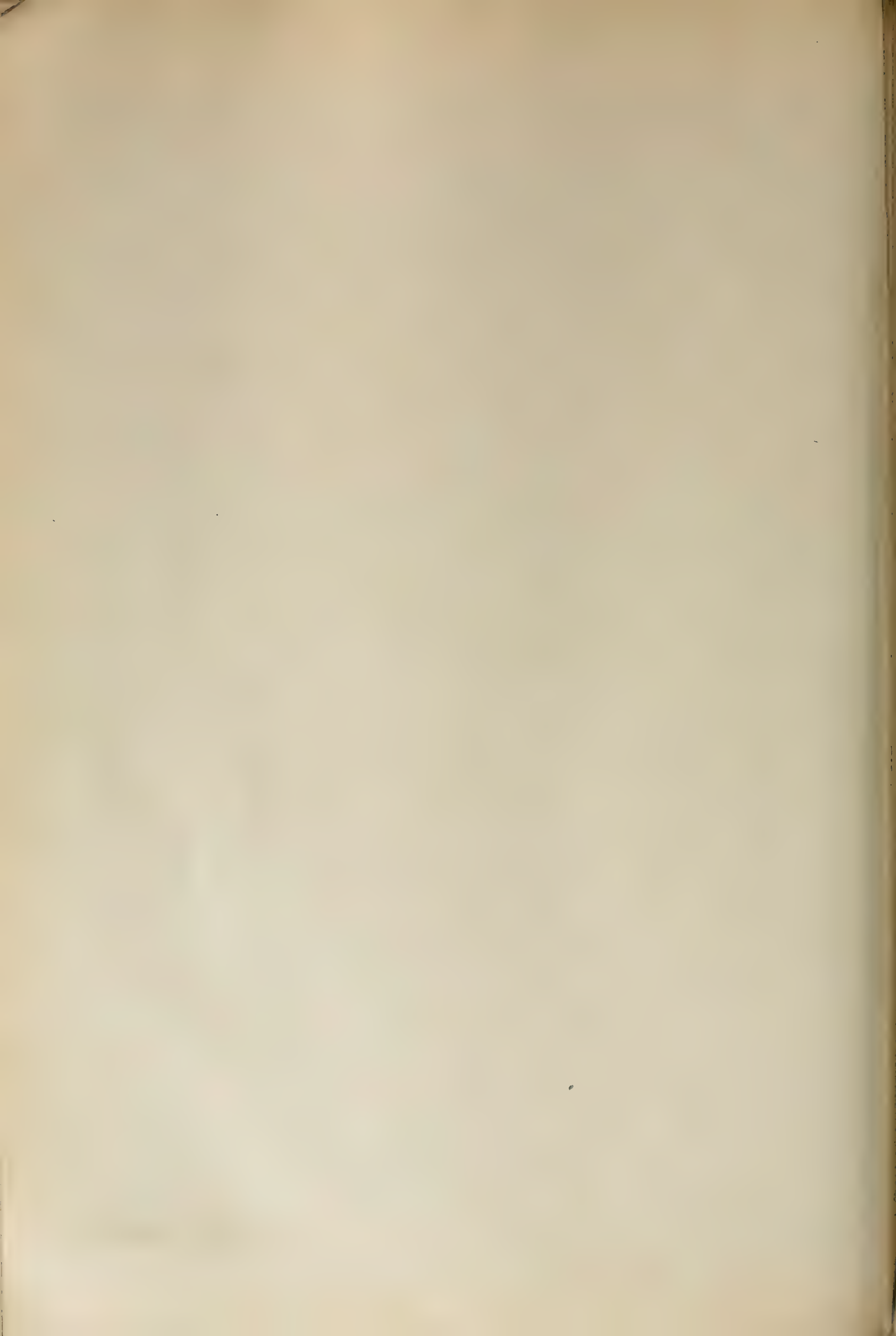


RIVER FRONT





BOARD OF TRADE NEW OFFICES, VICTORIA EMBANKMENT, LONDON, S.W.
THE RIVER FRONT, LONGITUDINAL SECTION THROUGH GREAT COURT, AND GROUND PLAN.
Selected Design by Mr. E. VINCENT HARRIS, F.R.I.B.A., Architect.



Building Intelligence.

THE APPROACH TO LINLITHGOW PALACE.—Linlithgow Town Council recently sought the advice of Mr. W. T. Oldrieve, F.R.I.B.A., Edinburgh, as to the manner in which they should carry out their proposed scheme of improving the Cross-square, and they have now received Mr. Oldrieve's recommendations on the subject. In his letter, Mr. Oldrieve states that the object of the proposed improvements is to provide a more dignified approach to the Palace, at the same time protecting the fountain and the memorial statue to the late Marquis of Linlithgow from damage. The problem would have been less difficult if the Linlithgow statue had not been in close relationship to the fountain; but, presumably, the question of its removal to another site cannot now be taken into consideration. If it could, he was of opinion that a still further improvement would be possible from an artistic standpoint. The broad principles upon which he had acted were: (1) That everything in the way of railings, trees, lamp-posts, etc., around the fountain or statue should be cleared away, as such obstacles irritate, and intercept the view. (2) That the largest possible area round the fountain and statue should be enclosed by a low stone curb and laid out with a broad border, with flowers and quite dwarf shrubs, the centre part being turfed and kept close mown so far as possible. (3) That the approach roadway to the Palace should be made with a slight curve, so as to give more interest to the approach, at the same time allowing the enclosed garden to be more central in the square.

COMPETITIONS.

NILES, ONTARIO.—Messrs. McKim, Mead, and White, architects, 30, Fifth-avenue, New York, are the successful competitors in the national competition for a memorial to William McKinley at Niles, Ontario. The estimated cost of the building is 500,000dol. The edifice will be two stories in height, and will contain an auditorium seated for 1,000 persons, a library, and assembly-hall. Facing the entrance will be a life-sized statue of President McKinley, who was born at Niles. The commission has been gained in a limited competition in which seven leading firms of American architects were invited to take part.

The city council of Peterborough have in course of laying-out a new cemetery 47½ acres in extent. The land was purchased for £5,000, and about the same amount will be expended in drainage and fencing, and in the provision of buildings, under the direction of the city surveyor, Mr. J. W. Walshaw.

Mr. George W. Wordsworth, chief assistant surveyor for the eastern district under the Manchester Corporation, is recommended by the main roads and bridges committee of the Lancashire County Council for the appointment as district surveyor of main roads and secondary roads for the Blackburn Hundred.

There has been on view this week at the College of Ambulances, Vere-street, W., a new medical and military hut designed on the Pritchard principle. By making the maximum use of the site area, at least 25 per cent. is, it is claimed, saved in the cost of construction. The parts are all standardised, and this facilitates pulling down and rebuilding when it is desired to remove the hut from one place to another.

At the meeting of the Salop County Council held at Shrewsbury on Saturday it was agreed to strengthen the Priorslee and Burlington road at a cost of £2,860, and the Wellington and Newport road at a cost of £2,730. Half the cost in each instance will be met by the Road Board. The council accepted the tender of £1,421 by Messrs. Hobrough (Gloucester) for widening and improving Ercall Mill Bridge. There was considerable discussion over a recommendation to acquire the literary and scientific institute at Coalbrookdale, built at an outlay of £4,000, at a cost of £750, for use as an art and technical school. Ultimately the recommendation was referred back to the committee for further consideration.

Correspondence.

UNHEALTHY SCHOOLS.

To the Editor of the BUILDING NEWS.

SIR,—I have been deeply interested in the controversy on "Unhealthy Schools." "Humanitarian" is so "wrapped up" in his walk on the Yorkshire moors that he is too cold to be the "shorn lamb," reminding one of the poor, misguided youth, "full of soul, but no hope." He has told us nothing but what is instilled in the most elementary mind. "Anti-Draft" and "Humanitarian" seem to forget the fact that cross-ventilation is regulated just as much as mechanical ventilation. I reiterate that vitiated air is removed more effectually than by patent mechanical ventilation schemes. If "Anti-Draught" and "Humanitarian" would visit recognised and regulated cross-ventilated schools, such as Staffordshire, Derbyshire, Northumberland, Middlesex, etc., they would receive more convincing arguments from the education architects and medical officers than could be contained in your correspondence columns. This is practice, not theory, and the result is universal adoption in the case of defective children.

Neither can we separate heating from cross-ventilation, and I venture to say that the expert knowledge of "Anti-Draught" and "Humanitarian" contained in their letters has more than ever convinced your readers that the cross-ventilated type of school will be the means of counteracting the evident degeneration of our people. As "Humanitarian" has said, "It is satisfactory to note that steps have been taken to bring the matter before Parliament." There is no better place to discuss this question, because co-incidentally an article appeared in the *Times* on the same date as your last issue, of which the following is an extract: "Owing to its remarkable system of ventilation the House of Commons is ideally adapted to encourage incipient influenza, and the ranks of members, already depleted by the call of the fighting services, have been still further depleted." "Humanitarian" could not have clinched the argument more effectively, and we unfettered advocates of cross-ventilation can now comfortably sit on the fence.—I am, etc.,

AN OLD B.N.D.C. BOY.

Middlesbrough.

SIR,—So long as fifty pupils have to be packed into a room 24ft. 8in. by 20ft. 3in., and with only one entirely free side, the satisfactory ventilation of schools during the winter months is an insoluble problem; that is my experience as the designer of several large elementary schools. Cross-draught in and out of windows on opposite sides of the room is fairly satisfactory in winter and perfectly so in summer, and that this is the best that can be done is obvious from the fact that none of those who have condemned this system in your columns can offer an alternative.

I have just built a hospital ward block of the usual type, with sash windows, having hopper sashes above the transoms on both sides of the ward, also having a radiator beneath each window-sill. Behind these radiators are large openings through the outer wall, lined with glazed ware, having no grates, and fitted with steel louvres inside—the radiators have no baffle-plates. On entering the ward one cold, windy day lately, I noticed all the hopper sashes open on both sides, the radiator inlets shut, and a perfect blizzard tearing across the ward.

A suggestion to the Sister to close the windows and open the radiator inlets on the windward side, and do precisely the opposite on the leeward side, was taken in good part, and a subsequent visit found the ward comfortably warm and perfectly sweet, and the fact that there was no perceptible draught, though a large body of fresh air was constantly moving across the ward, was due to the chill having been taken off the incoming air as it passed between the open sections of the radiators.

The point of this digression is that if class-

rooms could be planned like hospital wards, on the pavilion system, and at least 6ft. wider than the present minimum width, in order to give room for the incoming air from the radiators room to diffuse before reaching the first row of desks, I believe that the ventilation problem could be solved on the lines I have indicated.—I am, etc.,

Lincoln, Feb. 9.

BEATEN.

SIR,—Appos to above, enclosed extract from the "Belfast News-Letter" of the 2nd inst., may be interesting, and is instructive:

BELFAST CORPORATION: VENTILATION—OR DRAUGHT.

Councillor Alexander drew attention to the following paragraph in the minutes: "Alderman Shaw attended, and complained of a recent order, which, he understood, had been issued by the Medical Superintendent Officer of Health in respect of the ventilation of tramcars, and he was informed that the committee had not cognisance of any orders having been issued in the matter." A great deal of attention had been given to this matter in the public Press, and he thought this was a subject well worthy of looking into. Ventilation was a science more or less understood—less, he thought—and Dr. Bailie in this instance was only carrying out the important duty of safeguarding the interests of the great body of citizens who travelled by the tramcars every day in directing that the cars should be thoroughly ventilated. That Mr. Nance was ably carrying out these instructions many sufferers could testify. (Laughter.) The doctors differed, because Councillor Dr. Thomson, in his letter to the Press last month, stated that if this thorough ventilating policy was continued the great numbers of those travelling in the cars would soon become considerably less. Personally, he liked a well-ventilated tramcar, but he thought the recent innovation was crude and primitive, and a source of real danger to the delicate public. He moved that the Tramways Committee be asked to take into consideration the advisability of installing in the tramcars a really safe and healthful ventilating apparatus.

Alderman Shaw seconded.

The Lord Mayor said the matter could be brought up on the Tramway Committee minutes. The discussion was out of place at the moment.

Alderman Shaw said that when he appeared before the Public Health Committee he was of opinion that the Medical Officer of Health had issued such a report, but he then found out that such was not the case. All Dr. Bailie asked was that at the end of each journey some means should be taken to spray the trams. He believed that, in reply, the tramways manager wrote a letter, saying: "I cannot carry out what you have asked me to do, but I will do something better. I will see that the tram ventilators are kept open." That was where he blamed Mr. Nance. He was quite in favour of some ventilation, but he was not in favour of what Mr. Nance had carried out, even for the purpose of preventing the spread of scarlet fever. To open a ventilator at each end of the tram and, as Mr. Nance had said, "cause a thorough rush of air in the tram," would spread germs rather than prevent it.—I am, etc.,

ULSTER.

SIR,—In respect to Mr. D. Wynne Thomas's assertion that there is no down-draught with cross-ventilation when properly applied, it is a matter of elementary knowledge that if cold air is admitted into a warmer atmosphere, no matter at what angle, it will descend. This is a natural law—the law of gravity—and nothing can prevent it; draught, with cross-ventilation, a down-draught, with cross-ventilation a down-draught is therefore inevitable and unavoidable.

As with cross-ventilation open windows constitute the sole means of ventilation, if the entering air did not descend—that is to say, if there were no down-draught—the occupants of the room would derive no benefit from it, and must breathe a polluted

atmosphere, or, in other words, "stew in their own juice," and a most unsavoury stew it would be.

If the entering cold air mixes with the warmer ascending vitiated air, and descends partially warmed by the foul air, it is not fresh, pure air that is supplied, but merely diluted foul air, and as the warm, vitiated air continues to ascend and to mix with, and be returned by, the descending cool air, it is impossible with this system for anything but diluted foul air to be breathed, and as the extent of this dilution would depend upon the volume of cold air introduced, to secure even moderately diluted air would necessitate the entry of such large volumes of cold air as to cause a distinct and dangerous down-draught; so that the less down-draught experienced with cross-ventilation, the fouler the air in the room would be at breathing level, owing to insufficient dilution.

These facts speak for themselves; there is no getting away from them; they cannot be controverted, and should be patent to everyone; but I bemoan there is some truth in the old saying, "None so blind as he who will not see, none so deaf as he who will not hear"; but in a matter of such vital importance as this no effort should be spared to secure the necessary enlightenment.

The only difference between artificial hot-air ventilation—which, I observe, is condemned by the Board of Education—and cross-ventilation, is that with the one there is a down-draught of hot air, and with the other a down-draught of cold air, both equally returning the ascending vitiated air to be rebreathed. Now, even though, as is alleged, the oxygen in the hot air may to a certain extent be deteriorated, the injury to health caused thereby is infinitesimal compared with the evil effects and personal discomfort arising from a down-draught of cold air, particularly when the room is heated. It seems to me to be simply a case of out of the frying-pan into the refrigerator—roasted with the one and frozen with the other.

Personally, I would prefer the roasting, as being of the two evils the lesser. The fundamental error, however, with both systems is the down-draught, which returns the expired air to be rebreathed—a method condemned by the authorities as a danger, instead of an aid, to health.

Mr. Thomas says he knows of teachers who approve of this system. That reminds one of the curate's egg, but is even more pathetic. Is there any one of the supporters of cross-ventilation possessing the requisite technical knowledge, and who has had personal experience of its action, such as the children in a classroom would have? Who can give a practical or scientific explanation of the principle involved, and of its supposed merits and advantages? If there is such a one, any statement he might make would, I am sure, be listened to with interest.—I am, etc., CALORIC.

WATER SUPPLY AND SANITARY MATTERS.

HUGE DRAINAGE SCHEME FOR SWANSEA DISTRICT.—Major Norton, R.E., on behalf of the Local Government Board, concluded at Swansea on Saturday last the hearing of the application by the corporation for sanction to borrow £331,894 for the purposes of a huge drainage scheme that has been designed with a view of supplying the requirements not only of the borough, but of the six surrounding parishes. It is proposed also to include these parishes within the borough, totalling nearly three times the present acreage of the Swansea borough.

The death is announced of Mr. James Gauld, builder and contractor, Aberdeen.

The Upholland Urban District Council considered on Monday tenders for the erection of eight workmen's dwellings to help meet the increasing demand for housing accommodation, which for a number of years has been sadly lacking. The council have the sum of £1,395 at disposal; but the tenders ranged from £1,465 to £2,200. The lowest tender (£1,465) was accepted, and it was agreed to apply to the Local Government Board for a further loan of £100 to meet the accepted tender.

Our Office Table.

At the meeting on Monday of the Plymouth Corporation, a letter was received from Mr. R. A. Mill, hon. secretary of the Devon and Exeter Architectural Society, suggesting that, having regard to the extension of the borough by the absorption of Devonport and Stonehouse, and the great probability of general works of a public character being entered upon, the members of the Three Towns branch of the society desired the council to consider the possibility of engaging the services of the architects now practising in the borough, and for that purpose suggested that the principle of a selection by rota should be observed, as far as practicable. The letter was referred to a committee for consideration.

The Local Government Board has advised local authorities that in any cases in which contractors represent that they cannot supply goods at contract prices, the authority should consider whether, instead of enforcing their legal rights, they should endeavour to arrange with the contractors to continue to supply, on the understanding that whilst the contractors will form a basis for arrangement as to prices to be paid, the local authority will be willing, in proper circumstances, to settle the actual amounts at a later date, either by agreement or by arbitration.

"Masonry as Applied to Civil Engineering," by F. Noel Taylor (London: Constable and Co., Ltd., 6s.), is a practical treatise on the design and construction of engineering works in stone and heavy concrete, adapted for students and those practically engaged. It does not profess to deal with the artistic employment of stone, but treats the question from the point of view of the utilisation of the material in heavy works, of use rather than ornament, and illustrates by practical examples the principles of due economy in construction and the means, nevertheless, of insuring beyond doubt failure or collapse under any normal condition which the designer thinks wise to provide for.

When the law passed the last Legislature of Utah regulating the practice of architecture in that State, the penalty clause was stricken out. The State Board of Architecture urges the Governor, in its report just filed, that he use his influence with the coming Legislature to have the clause enacted into the law. The report says that the law as passed embodied the best of architectural legislation that could be found in the country; but an essential feature, the penalty clause, was stricken out along with some unimportant clauses at the last moment, thus rendering the law deficient, if not wholly inoperative.

Mr. F. H. Tullock, an inspector of the Local Government Board, sat at the council-house, Birmingham, on Tuesday, to inquire into the application of the city council for sanction to borrow £4,460 and £4,100 for works of sewerage at Edlington and Acock's Green respectively. The plans were explained by Mr. H. E. Stilgoe, the city surveyor.

The death took place on Saturday, at his residence, Fair Elms, Hatch-end, Pinner, as the result of a gunshot wound accidentally inflicted, of Mr. Benjamin B. Evans, of Kilburn, and until a few weeks ago Progressive representative on the London County Council for Limehouse. Mr. Evans, who was forty-five years of age, was the hon. secretary of the Town Tenants' League, which was founded by the Drapers' Chamber of Trade, and was chairman of the Building Acts Committee of the chamber.

New Council schools adjoining the Lescadjack Recreation-ground at Penzance were opened on Monday. The buildings afford accommodation for 250 boys, 250 girls, and 200 infants—a total of 700. Each of the departments is separate and self-contained, with easy access from one to the other, these objects being achieved by adopting the wings principle for the boys and girls, leaving the central portion to the infants. The children have a dinner-room, with ovens for the warming of food. Messrs. Cowell and Drewitt, of Penzance and Newquay, are the architects, and the outlay has been £7,250.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Glasgow Architectural Craftsmen's Society. "The Science of Stone-cutting," by J. S. Boyd, F.R.I.B.A. 8 p.m.

SATURDAY (To-morrow).—Institution of Municipal Engineers. Northern District Annual Meeting at the Town Hall, Newcastle-on-Tyne. 2.30 p.m. Annual Dinner at the Royal Turk's Head Hotel, Grey-street. 6 p.m.

MONDAY.—Royal Academy. "The Romanesque and Gothic Arts in the Low Countries," by Professor E. S. Prior, M.A., A.R.A. 4 p.m.

Victoria and Albert Museum. "English Cathedrals and Monasteries," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.

Royal Institute of British Architects. "Architectural Sculpture in Spain," by Andrew N. Prentice, F.R.I.B.A. 8 p.m.

Royal Society of Arts. "Motor Fuel," Fothergill Lecture No. 1, by Prof. Vivian B. Lewes. 8 p.m.

WEDNESDAY.—Royal Academy. "Architecture in Flanders and Brabant," by Professor E. S. Prior, M.A., A.R.A. 4 p.m.

Royal Society of Arts. "The Decorative Textile Industries and the Designer's Relation Thereto," by Arthur Wilcock. 8 p.m.

THURSDAY.—British Museum. "Aqueducts of Rome," by Banister F. Fletcher. 4.30 p.m.

"Belgian Art," No. 3, by Camille Poupeye, of Malines. Architectural Lecture Theatre, University College, Gower-street, W.C. 5.30 p.m.

FRIDAY (Feb. 19).—Town Planning Institute. "Economies of Town Planning in Relation to Land Development," by George L. Pepler, F.S.I. 8 p.m.

SATURDAY (Feb. 20).—Annual Dinner of Clerks of Works Association. King's Hall, Holborn Restaurant. 6 p.m.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the Editor of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

. Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits, on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither then nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

RECEIVED.—M. S. and Co., Ltd.—N. R. Co., Ltd.—B. O. Co., Ltd.—W. and Co.—H. and Sons.—C. H. P.—W. and O., Ltd.—C. D. and Co.—C. and Co., Ltd.—W. and S.—H. B. and E., Ltd.—R. C. Co., Ltd.—A. P.—J. D. and Son.—H. and S., Ltd.—W. O. and Son.—G. J. and Son.—W. Ltd.—G. and Son.—W. A. O.—T. C. B.—W. C. C.—R. I. B. A.—C. W. H.

P. M.—Yes.

R. D. O.—Please send.

COMPETITOR.—We have no further information.

G. S.—We incline to your construction of the clause; but it is certainly obscurely drawn, and might lead to litigation.

JONO.—A useful set of calipers, square, and divider in neat case is supplied by the L. S. Starrett Co., 36, Upper Thames-street, E.C. Get their Catalogue 20 E.F., which they post free.

The partnership hitherto subsisting between Herbert Lionel Thornely, Albert Victor Rooke, Ernest Henry Alderson Barron, and George Helson, all of Plymouth, Devon, architects and surveyors, at The Crescent, Plymouth, under the style of Thornely, Rooke, and Barron, has been dissolved.

Mr. L. F. Roselieb, R.B.S., 4, Avenue Studios, South Kensington, has been commissioned to execute the two sculptured figures, "Art" and "Commerce," 8 ft. high, to the Sicilian marble pilasters of the front of the building, No. 70, New Bond-street, W. Messrs. Palgrave and Co. are the architects. The modelled and enriched three-tier bronze bay has been entrusted to the Birmingham Guild, Ltd.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us. Timber quotations we omit altogether, as published figures differ so widely that they are, we fear, in many cases quite unreliable.

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£7 10 0 to £8 0 0	
Wrought-Iron Girder Plates	7 15 0 .. 10 0 0	
Steel Girder Plates	8 0 0 .. 9 0 0	
Bar Iron, good Staffs	6 5 0 .. 8 10 0	
Do., Lowmoor, Flat, Round, or Square	22 0 0 .. 0 0 0	
Do., Welsh	5 15 0 .. 5 17 0	
Boiler Plates, Iron—		
South Staffs	8 0 0 .. 8 15 0	
Best Snedshill	9 0 0 .. 9 10 0	

Angles 10s., Tees 30s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s. to £9. Ditto galvanised, £14 to £15 10s. per ton.

	No. 18 to 20.	No. 22 to 24
Galvanised Corrugated Sheet Iron—		
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0 .. £13 10 0	
Best ditto	13 0 0 .. 14 0 0	

	Per ton.	Per ton.
Wire Nails (Points de Paris)—		
3 to 7 8 9 10 11 12 13 14 15 B.W.G.		
8/3 8/9 9/3 9/9 10/3 11/1 11/9 12/6 13/6 per cwt.		

	Per ton.	Per ton.
Cast-Iron Columns	£6 17 6 to £8 10 0	
Cast-Iron Stanchions	6 17 6 .. 8 10 0	
Rolled-Iron Fencing Wire	8 5 0 .. 8 10 0	
Rolled-Steel Fencing Wire	7 5 0 .. 7 10 0	
Galvanised	8 15 0 .. 9 5 0	
Cast-Iron Sash Weights	5 10 0 .. 5 15 0	
Cut Floor Brads	10 15 0 .. —	
Corrugated Iron, 24 gauge	16 0 0 .. —	
Galvanised Wire Strand, 7 ply.		
14 B.W.G.	14 5 0 .. —	

	Per ton.	Per ton.
B.B. Drawn Telegraph Wire, Galvanised—		
0 to 8 10 11 12 B.W.G.		
£10 10s. £10 15s. £11 0s. £11 5s. £11 15s. per ton.		

	Per ton.	Per ton.
Cast-Iron Socket Pipes—		
3in. diameter	£6 15 0 to £7 2 6	
4in. to 6in.	6 10 0 .. 6 12 6	
7in. to 24in. (all sizes)	6 17 6 .. 7 2 6	

[Coated with composition, 5s. 0d. per ton extra. Turned and bored joints 5s. per ton extra.]

	Per ton.	Per ton.
Pig Iron—		
Cold Blast, Lillieshall	80s. 0d. to 127s. 6d.	
Hot Blast, ditto	87s. 0d. .. 97s. 0d.	

	Per ton.	Per ton.
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—		
Gas-Tubes	72½ p.c.	
Water-Tubes	66½ ..	
Steam-Tubes	65 ..	
Galvanised Gas-Tubes	60 ..	
Galvanised Water-Tubes	56½ ..	
Galvanised Steam-Tubes	50 ..	

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	£23 15 0 to	
Country	24 15 0 ..	
Lead Barrel Pipe, Town	24 15 0 ..	
Country	25 15 0 ..	
Lead Pipe, Tinned inside, Town	25 15 0 ..	
Country	26 15 0 ..	
Lead Pipe, Tinned inside and outside	28 5 0 ..	
Country	29 5 0 ..	
Composition Gas-Pipe, Town	26 15 0 ..	
Country	27 15 0 ..	
Lead Soil-pipe (up to 4½in.) Town	26 15 0 ..	
Country	27 15 0 ..	
" [Over 4½in. £1 per ton extra.]		

	Per ton.	Per ton.
Lead, Common Brands	17 17 6 .. £18 12 6	
Lead Shot, in 2½lb. bags	24 15 0 ..	
Copper Sheets, sheathing & rods	84 0 0 .. 84 10 0	
Copper, British Cake and Ingot	68 15 0 .. 69 5 0	
Tin, English Ingots	172 0 0 .. 173 0 0	
Do., Bars	175 0 0 .. 176 0 0	
Pig Lead, in 1cwt. Pigs (Town)	19 2 6 .. 19 10 0	
Sheet Lead, Town	23 5 0 ..	
Country	24 5 0 ..	
Genuine White Lead	30 5 0 ..	
Refined Red Lead	29 0 0 ..	
Sheet Zinc	69 0 0 ..	
Old Lead, against account	17 15 0 ..	
Tin	per cwt. 9 10 0 ..	
Cut nails (per cwt. basis, ordinary brand)	0 12 9 ..	

* For 5 cwt. lots and upwards.

SLATES.

	in.	in.	£ s. d.	per 1,000 of
Blue Portmadoc	20	10	12 6	1,200 at r. stn.
"	16	8	6 12 6	"
Blue Bangor	20	10	13 2 6	"
"	20	12	13 17 6	"
First quality	20	10	13 0 0	"
"	20	12	13 15 0	"
"	16	8	7 5 0	"
Eureka unfading	20	10	15 17 6	"
green	20	12	18 7 6	"
"	18	10	13 5 0	"
"	16	8	10 5 0	"
Permanent Green	20	10	11 12 6	"
"	18	10	9 12 6	"
"	16	8	6 12 6	"

BRICKS.

(All prices net.)

First Hard Stocks	£1 15 0	per 1,000	alongside, in
Second Hard Stocks	1 11 0	"	" (river.
Mild Stocks	1 9 0	"	" delivered
Picked Stocks for			" at rly. stn.
Facings	2 5 0	"	"
Flettons	1 14 0	"	"
Pressed Wire Cuts	1 18 0	"	"
Red Wire Cuts	1 14 0	"	"
Best Fareham Red	3 12 0	"	"
Best Red Pressed			"
Ruabon Facing	5 0 0	"	"
Best Blue Pressed			"
Staffordshire	3 15 0	"	"
Ditto Bullnose	4 0 0	"	"
Best Stourbridge			"
Firebricks	4 0 0	"	"
2½in. Best Red Ac-			"
crington Plastic	4 10 6	"	"
Facing Bricks			"

3½" Accrington Best Red Plastic Facing per 1,000	£2 10 0	
Bricks		
3½" ditto Second Best Plastic ditto	2 2 6	
Ditto Ordinary Secondary Bricks	1 11 3	
Ditto Plastic Engineering Bricks	1 17 6	
Sewer Arch Brick not more than 3½ in		
thickest part	2 0 0	
3½" Chimney Bricks fit for outside work	2 6 0	
3½" ditto ditto through and through	2 0 0	
3½" Beaded, Ovolo and Bevel Jamb; Octa-		
gons; 2½" and 3" radius Bullnoses; Stock		
patterns	3 7 6	
Accrington Air Bricks, 9" x 2 course deep, each	0 0 6	
Ditto ditto 9" x 1 course	0 0 3	

Accrington Camber Arches:—		
3 course deep, 4½" soffit, per foot opening	0 1 3	
4 ditto 4½" ditto ditto ditto	0 1 8	
5 ditto 4½" ditto ditto ditto	0 2 1	
6 ditto 4½" ditto ditto ditto	0 2 6	
3 ditto 9" ditto ditto ditto	0 2 1	
4 ditto 9" ditto ditto ditto	0 2 11	
5 ditto 9" ditto ditto ditto	0 3 6	
6 ditto 9" ditto ditto ditto	0 4 6	

* Net free on rail, or free on boat at work.

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

	White, Ivory, and	Best.	Buff, Cream, Other	Second
Salt Glazed.				
Best. Seconda. & Bronze. Colours.				
Stretchers—				
£12 7 6 £10 17 6 £13 17 6 £17 17 6 £13 7 6				
£11 17 6 10 7 6 13 7 6 17 7 6 11 17 6				
Quoins, Bullnose, and 4½in. Flats—				
15 17 6 14 17 6 17 17 6 21 7 6 15 17 6				
Double Stretchers—				
17 17 6 16 7 6 20 17 6 24 7 6 17 17 6				
Double Headers—				
14 17 6 13 7 6 17 17 6 21 7 6 14 17 6				
One side and two ends, square—				
18 17 6 17 17 6 21 7 6 26 7 6 18 17 6				
Two sides and one end, square—				
19 17 6 18 7 6 22 17 6 26 17 6 19 17 6				
Splays and Squints—				
17 7 6 15 7 6 21 17 6 24 7 6 17 7 6				
Plinth and Hollow Bricks, Stretchers and Headers—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Double Bullnose, Round Ends, Bullnose Stops—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Rounded Internal Angles—				
4d. each 3d. each 5d. each 5d. each 4d. each				

MOULDED BRICKS.

Stretchers and Headers—				
8d. each 8d. each 8d. each 8d. each 8d. each				
Internal and External Angles—				
1½ each 1½ each 1½ each 1½ each 1½ each				
Sill Bullnose, Stretchers, and Headers—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Majolica or Soft Glazed Stretchers and Headers				
" " Quoins and Bullnose				
Compass bricks, circular and arch bricks				
of single radius £6 per 1,000 over above				
list for their respective kinds and colours				
Camber arch bricks, any kind or colour,				
1s. 2d. each				
Stretchers cut for Closers and Nicked Double				
Headers, £1 per 1,000 extra.				

* These prices are carriage paid in full truck loads to London Stations.	s. d.	
Thames Sand	7 6	per yard, delivered
Pit Sand	7 0	"
Thames Ballast	6 0	"

Best Portland Cement	36 0	to 41 0 delivered
Ground Blue Lias Lime	31 0	per ton delivered

Exclusive of charge for sacks.

Grey Stone Lime	13 6	to 14 0 delivered
Stourbridge Fireclay in sacks	27s. 0d.	per ton at railway station.

STONE.*

Red Mansfield, in blocks	per foot cube	£0 2 4
Darley Dale, ditto	"	0 2 3
Red Corshill, ditto	"	0 2 2
Closeburn Red Freestone, ditto	"	0 2 0
Ancaster, ditto	"	0 1 10
Greenshild, ditto	"	0 1 10
Beer, ditto	"	0 1 6
Chilmark, ditto (in truck at	"	0 1 10½
Nine Elms)	"	0 2 0
Hard York, ditto	"	0 2 0
Do. do. 6in. sawn both sides,		
landings, random sizes	per foot sup.	0 2 8
Do. do. 3in. slab sawn two		
sides, random sizes	"	0 1 3

* All F.O.R. London.

Bath Stone, delivered on road	£ s. d.	
waggons, Paddington Depot	per foot cube	0 1 7½
Ditto, ditto, Nine Elms Depot	"	0 1 9½
Beer Stone, delivered on rail		
at Seaton Station	"	0 1 1
Ditto, delivered at Nine Elms		
Station	"	0 1 7½
Portland Stone, in random blocks of 20ft. average:—		
Delivered on road waggons	Brown	White
at Paddington Depot,	Whit Bed.	Base Bed.
Nine Elms Depot, or	Per foot cube.	
Pimlico Wharf	£0 2 3 .. £0 2 4½	

TILES.

	s. d.	Divrd. at
Plain red roofing tiles	42 0	per 1000 ry. sn.
Hip and Valley tiles	3 7	per doz.
Broseley tiles	50 0	per 1000
Ornamental tiles	52 6	"
Hip and Valley tiles	4 0	per doz.
Ruabon red, brown, or brindled		
ditto (Edwards)	57 6	per 1000
Ornamental ditto	60 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 0	"
Selected "Perfecta" roofing		
tiles: Plain tiles (Peake's)	46 0	per 1000
Ornamental ditto	48 6	"
Hip tiles	3 10½	per doz.
Valley tiles	3 4½	"
"Rosemary" brand plain tiles	48 0	per 1000
Ornamental tiles	50 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 8	"
Staffordshire (Hanley) Reds or		
brindled tiles	42 6	per 1000
Hand-made sand-faced	45 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"
Hartshill "brand plain tiles,		
sand-faced	45 0	per 1000
Pressed	42 6	"
Ornamental ditto	47 6	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"

OILS.

Rapeseed, English pale, per tun	£28 15 0	to £29 5 0
Ditto, brown	" 26 15 0	" 27 5 0
Cottonseed, refined	" 29 0 0	" 30 0 0
Olive, Spanish	" 39 10 0	" 40 0 0
Seal, pale	" 21 0 0	" 21 10 0
Cocoanut, Cochin	" 46 0 0	" 46 10 0
Ditto, Ceylon	" 42 10 0	" 43 0 0
Ditto, Mauritius	" 42 10 0	" 43 0 0
Palm, Lagos	" 32 5 0	" 33 5 0
Ditto, Nut Kernel	" 35 0 0	" 35 10 0
Olseine	" 17 5 0	" 19 5 0
Sperm	" 30 0 0	" 31 0 0
Lubricating, U.S. per gal.	" 0 7 0	" 0 8 0
Petroleum, refined	" 0 0 6½	" 0 0 6
Tar, Stockholm per barrel	" 1 6 0	" 1 10 0
Ditto, Archangel	" 0 19 6	" 1 0 0
Linseed Oil per gal.	" 0 2 10	—
Baltic Oil	" 0 3 1	—
Turpentine	" 0 3 8	—
Putty (Genuine Linseed	" 0 9 0	—
Oil	per cwt.	—
Pure Linseed Oil	" 0 9 0	—
"Stority" Brand	" 0 9 0	—

GLASS (IN CRATES).

English Sheet Glass: 15oz.	21oz.	26oz.	32oz.
Fourths	5½d. ... 5½d. ... 6½d. ... 7d.		
Thirds	5½d. ... 6½d. ... 6½d. ... 8½d.		
Fluted Sheet	4½d. ... 5½d.		
Hartley's English Rolled	3½in. 3½in. 4in.		
Plate	3d. ... 3½d. ... 4d.		

	White.	Tinted.
Figured Rolled and Repoussé	4½d. ... 6d.	

VARNISHES, &c.

	Per gallon
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of	
churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Fine Pale Durable Copal	0 18 0
Extra Fine French Oil	1 1 0
Eggshell Flating Varnish	0 18 9
White Copal Enamel	1 4 8
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 6
French and Brush Polish	0 10 0

TRADE NOTES.

The West Riding County Council, in the erection of the Bradley new schools, we learn, have specified the powder Pudlo for rough casting. We understand that when Pudlo is included in the cement, roughcast work is made quite impervious to driving rains.

Under the direction of Messrs. Walker and Harwood, architects, 17, Pall Mall East, S.W., the Boyle system

FOR

Olivers'**Seasoned****Hardwoods,**

TO—

WM. OLIVER & SONS, Ltd.,**120, Bunhill Row, London, E.C.****TENDERS.**

* Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ANGMERING.—For provision of working-class dwellings at Angmering, for the East Preston Rural District Council.

Oliver and Son, Brighton...	£1,060 0 0
Cheeseman, J., Angmering...	906 0 0
Sandall and Son, Worthing...	905 0 0
Drake, C. J., and Co., Rustington...	910 0 0
Ling, H., and Co., Brighton...	894 0 0
Linfild, J., and Sons, Ltd., Littlehampton...	880 0 0
Peskett and Sons, Angmering...	848 0 0
Bowen, J., Clapham, S.W.	830 0 0
Harris, E., Angmering...	744 0 0
Grevatt, J., Worthing...	680 0 0

(Tenders referred to the Sanitary and Housing Committee.)

ATHERSTONE.—For erection of the workhouse master's new house, for the guardians:—

Holland (accepted)...	£690 0 0
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BARKING.—For works in connection with the Ripple-road widening No. 1 (Eastbury estate), for the Barking Town Urban District Council. Mr. R. A. Lay, A.M.I.C.E., acting surveyor:—

Mowlem, J., and Co.	£5,292 7 4
Pedrette, T. W.	5,285 5 4
Griffiths, W., and Co.	5,218 1 6
Glenny, E. F.	4,941 8 7
Lingwood, W., Jun.	4,726 19 2
Jackson, D. T., Barking*	4,505 15 2

(Surveyor's estimate, £4,650 13s.)

* Accepted.

BARKING, E.—For the provision and erection of four centrifugal pumps at the northern outfall sewerage works, for the London County Council:—

Drysdale and Co., Ltd., Glasgow	£221 0 0
Cochrane, J., Glasgow	211 0 0
Gwynnes, Ltd., Hammersmith*	201 0 0

* Accepted.

BARNSBURY, N.—For internal and external painting and repairs to the relief station at Barnsbury, for the Islington Guardians. Mr. E. J. Harrison, 9, Gray's Inn-square, W.C., architect:—

Sims, W., Stepney	£327 0 0
Sharpin, W. S., Bow	310 0 0
Haydon, J., and Sons, Hackney	272 0 0
General Building Co., St. Martin's-lane	265 0 0
Fenn, A. M., Woolwich	250 0 0
Johnston, J., Limehouse	249 0 0
Stevens, W., and Sons, Highgate	226 0 0
Jerram, J. W., Plaistow	215 0 0
Wicks, A. J., Walthamstow	214 0 0
Hocking, J., and Co., Old Charlton	209 0 0
Alflett, B., and Son., Caledonian-road	210 0 0
Navarino Guild, Camden Town	208 10 0
Bate Bros., Horseley Rise	207 0 0
Head, F. and H., Notting Hill Gate	193 0 0
Jenkin, E. A., Wood Green	191 2 0
Catterball, J. L., Vauxhall Bridge-road	185 10 0
Lever, T. B., and Son, Holloway	181 0 0
Inns, A. H., Camomile-st., E.C.	168 0 0
Powers, J. J., Tottenham	166 0 0
Oliver and Fisher, Islington	157 15 0
Hare, C., and Co., Leyton*	138 0 0

* Accepted.

BARNSELY.—For the sewerage of a portion of the parish of Carlton, for the Barnsley Rural District Council. Mr. H. Jackson, 39, Newhall-street, Birmingham, engineer:—

Ruckledge, M., Barnsley	£1,034 10 6
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(Accepted.)

BATTERSEA.—For the supply of yellow match-boarding for providing plank beds for military guards, for the Metropolitan Water Board:—

King and Scarborough, Kingsland-road, N. (accepted)...	£296 5 0
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For boiler tubes at Battersea Waterworks:—

Babcock and Wilcox, Ltd.	175 6 9
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(Accepted.)

BETHNAL GREEN, N.E.—For the erection of a new police-station at Bethnal Green. Mr. J. Dixon Butler, F.R.I.B.A., New Scotland Yard, S.W., architect. Quantities by Messrs. Thurgood, Son, and Chidgey, 8, Adelphi-terrace, Strand, W.C.:—

Todd and Newman	£11,781 0 0
Wall, C., Ltd.	10,850 0 0
Adamson and Sons	10,768 0 0
Higgs and Hill	10,770 0 0
Garlick, J.	10,690 0 0
Dickens	10,535 0 0
Prestige and Co.	10,455 0 0
Sheffield Bros.	10,422 0 0
Smith and Son	10,340 0 0
Jarvis and Sons	10,304 0 0
Roume and Co.	10,296 0 0
Dove Bros.	10,281 0 0
Patman and Fotheringham	10,171 0 0
Jerram	9,844 0 0

BISHAM-WITH-NORBRECK.—For the sewerage, draining, kerbing, and paving, Queen's Drive and Red Bank-road, for the Bisham-with-Norbreck Urban District Council. Mr. T. Harrop, surveyor:—

Boyson, G., Ashton-on-Mersey	£13,977 0 0
Farrell, J., Blackpool	11,763 9 8
Gregson, W., Lytham	11,725 18 8
Balmer, P., Aintree	11,595 8 9
Fielding, R., and Sons, Blackpool	11,542 0 0
Shepherd, T., and Sons, Rochdale	11,230 13 7
Hayes, J. T., Blackpool	11,006 5 10
Crisp, J. R., Stalybridge	10,823 0 0
Taylor, E., Ltd., Blackpool	10,493 4 4
Hayward, S., Thornton, Blackpool	9,868 11 8

CASTLE CARY.—For erection of ten houses, for the Wincanton Rural District Council. Mr. S. Thompson Clothier, architect:—

Dunthorn, D. R., Glastonbury	£1,495 0 0
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(Accepted.)

CHEADLE.—For building boundary walls and shed at the council's depot, Ravenoak-road, Cheadle Hulme, for the Cheadle and Gatley Urban District Council. Mr. F. R. Gibbins, B.Sc., A.M.I.C.E., surveyor:—

Hardon, H.	£327 8 6
Marsland, J.	322 1 0
Gosling & Stafford, Hazel Grove	294 7 10
Hazeldine, S.	284 0 0
Powell, W. F.	276 3 9
Alcock, J., and Sons, Cheadle*	273 10 2

(Rest of Cheadle Hulme)

* Accepted.

CHESTER-LE-STREET.—For the erection of fifty houses for the working classes, for the urban district council:—

Douglass, J., Newcastle-on-Tyne	£10,360 0 0
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(Accepted.)

CHILD'S HILL.—For erection of conveniences at Child's Hill recreation-ground, for the Hendon Urban District Council:—

Williams, D. T. (accepted)	£118 10 0
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CROSSNESS, S.E.—For the construction of an ash-heap at the southern outfall sewerage works, for the London County Council:—

Easton Lift Co., Ltd., Southwark, S.E.	£202 10 0
Ransome-Vermehr Machinery Co., Ltd., Westminster, S.W.	197 0 0
Leeds Engineering and Hydraulic Co., Ltd., Rodley (accepted)	197 0 0

CROSSNESS, S.E.—For the provision of a steam travelling crane at the southern outfall sewerage works, for the London County Council:—

Booth, J. & Bros., Ltd., Ridley	£925 0 0
Coles, H. J., Ltd., Derby	693 0 0
Sothorpe and Pitt, Ltd., Bath	653 0 0
Smith, T., and Sons, Rodley*	745 0 0

* Accepted.

CROSSNESS, S.E.—For the provision of chains for filth screens at the southern outfall sewerage works, for the London County Council:—

Gibbins Bros., Ltd. (accepted)	£93 17 6
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ERCAIL, SHROPSHIRE.—For widening the bridge at Ercail Mill, for the Salop County Council:—

Hobrough and Co., Gloucester	£1,421 0 0
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(Accepted.)

HESWALL.—For the construction of a discharge block at the Pensby convalescent home, near Heswall, for the Wirral Joint Hospital Board. Messrs. J. H. Davies and Sons, 14, Newgate-street, Chester, architects:—

Fleming, W., and Co., Neston	£219 0 9
Fleming, A., Neston	212 0 0
Rogers, W. M., and Son, Greasby	185 0 0
Fleming, W., Neston	177 0 0
Lee, J., and Son, Higher Bebington (accepted)	158 17 0

IPSWICH.—For the erection of two temporary pavilions at the isolation hospital, Foxhall-road. Mr. J. R. Mead, borough engineer and surveyor:—

Turner, P. J., Basil House, Cowper-street, Ipswich*	£3,294 0 0
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* Accepted.

KEMPTON PARK.—For the construction of a 15-ton road-wagon weighbridge platform, for the Metropolitan Water Board:—

Avery, W. T., Ltd.	£106 10 0
Pooley, H., and Son, Ltd.	101 0 0
Denison, S., and Son, Ltd.*	82 0 0

* Accepted.

LIMEHOUSE, S.E.—For alterations to the police station at Limehouse. Mr. J. Dixon Butler, F.R.I.B.A., New Scotland Yard, S.W., architect. Quantities by Messrs. Thurgood, Son, and Chidgey, 8, Adelphi-terrace, Strand, W.C.:—

Holland and Hannen	£2,333 0 0
Holmes	2,378 0 0
Rice and Sons	2,232 0 0
Jarvis and Son	2,159 0 0
Monk, A.	2,146 0 0
Patman and Fotheringham	2,026 0 0
Len, Thornton, and Co.	2,006 0 0
Newby Bros.	1,912 8 3

LIMEHOUSE, S.E.—For cleansing, redecorating, and alterations at the Limehouse library, for the Stepney Borough Council:—

Turnbull and Son	£170 0 0
Jarvis and Sons, Ltd.	460 0 0
Howlett and Son	415 0 0
Johnson, J.	386 0 0
Stuttle and Son	378 0 0
Barker, G., New-road*	343 0 0

* Recommended for acceptance.

LONDON.—For the supply of two 12in. water mains, to be laid in a new subway constructed by the Port of London Authority under the Tobacco Dock-passage, for the Metropolitan Water Board:—

Piggott, T., and Co., Ltd.	£689 0 0
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(Accepted.)

LONDON.—For the provision of five wood and iron ambulance stations, for the London County Council:—

A.	B.	C.	D.	E.
Harrison and Co., Camberwell—£325 ... £295 ... £301 ... £290 0 0 ... £1,222 0 0				
Boulton and Paul, London—278 ... 258 ... 258 ... 257 0 0 ... 1,061 0 0				
Ginger, Lee, and Co., Ltd., Manchester—264 ... 260 ... 261 ... 264 0 0 ... 1,049 0 0				
Humphreys, Ltd., Knightsbridge—250 ... 230 ... 231 ... 237 0 0 ... 951 0 0				
Alnwick Foundry Co., Ltd., Alnwick—200 ... 190 ... 195 ... 195 0 0 ... 780 0 0				
Cearns, W. J., Stratford—210 ... 180 ... 182 ... 180 0 0 ... 752 0 0				
Palmer, T. W., and Co., Merton—176 ... 160 ... 160 ... 161 10 0 ... *657 10				
A.—Shoreditch. B.—St. George's, Newington. C.—Lee, D.—Brixton. E.—Total.				Accepted for all four stations.

LUDLOW.—For building twelve cottages in Holdgate Fee, for the town council:—

Turford and Southward (accepted).

NORTH WOOLWICH.—For the erection of a new engine-house at the North Woolwich sewage pumping station, for the London County Council:—

Moss, S. E., Southend-on-Sea	£13,979 16 4
Dick, Kerr, and Co., Ltd., Cannon-street, E.C.	13,476 19 6
Coles, A. N., Plymouth	12,674 18 7
Fenn, A. M., Woolwich, S.E.	12,660 0 0
Mills, W., and Sons, Ltd., Westcombe Park	11,671 11 0
Everitt, G. E., and Sons, Ltd., Croydon (accepted)	11,615 0 0

PORTSMOUTH.—For carrying out extensions to the Milton Infectious Diseases Hospital, for the town council. Mr. Arthur W. Ward, Town Hall, Portsmouth, borough engineer:—

Lavington, Ltd.	£29,514 0 0
Moss, S. E.	27,526 0 0
Franklin (Deddington), Ltd.	26,895 0 0
Springers, E. and A., Portsmouth	26,200 0 0
Corke, F., Southsea	25,736 0 0
Evans, W. W., Southsea	25,500 0 0
Salter, S., Southsea	25,472 0 0
Privett, F. J., Southsea	25,127 0 0
Crockerell, J., Southsea	24,916 0 0
Tanner, J., Castle road, Southsea (accepted)	24,400 0 0

ROCESTER, STAFFS.—For sinking a borehole on the grounds of the new council school, for the Staffordshire Education Committee:—

Isler, C., and Co., Ltd., London	£179 0 0
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(Accepted.)

SHORTLANDS, KENT.—For the erection of pumping-station buildings and contingent works at Shortlands, for the Metropolitan Water Board:—

A.	B.
Peddle, E.	£10,867 0 0
Graham, T., and Co.	9,673 13 8
Dick, Kerr and Co., Ltd.	9,026 3 6
Smith, J., and Sons, Ltd., Norwood	8,976 0 0
Wallis, G. E., and Sons, Ltd.	8,791 0 0
Downs, W., Ltd.	8,657 10 0
Crossley, T., and Son	8,675 0 0
Proctor, E., and Sons	8,371 19 8
Lawrence, E., and Sons, Ltd.	8,018 0 0
A.—Tender as sent in. B.—Tender as corrected.	£9,007 4 1

* Accepted. † Further amended to £8,311.

SOUTHAMPTON.—For alterations and providing new lavatories at the Royal Hotel. Mr. W. Burrough Hill, F.S.I., 93, Above Bar, Southampton, architect:—

Jenkins and Sons	£343 0 0
Wright, A., and Son	325 0 0
Brazier and Son	309 0 0
Russell, S., and Son (accepted)	293 10 0

(All of Southampton.)

SOUTHAMPTON.—For alterations and additions to premises, Church-passage, French-street, for Messrs. Binning and Co. Mr. W. Burrough Hill, F.S.I., 93, Above Bar, Southampton, architect:—

Brazier and Son	£280 0 0
Wright, A., and Son	278 0 0
Russell, W. A. (accepted)	270 0 0

(All of Southampton.)

SOUTHAMPTON.—For structural alterations at Above Bar, for Messrs. Price Bros., bakers. Mr. W. Burrough Hill, F.S.I., 93, Above Bar, Southampton, architect:—

Stevens, H., and Co.	£59 18 0
Jenkins and Sons	58 0 0
Wright, A., and Son (accepted)	49 15 0

(All of Southampton.)

STREATHAM, S.W.—For the supply of furniture and fittings for Furzedown Training College, Streatham (schedule No. 197), for the London County Council. Accepted tenders:—

Items 1, 2, 3, 4, 6, and 7—Hammer, G. M., and Co., Ltd., Bermondsey	£125 0 0
Items 5 and 18—Bradford, T., and Co., Salford	73 0 0
Items 9 (a) and (b), 10 (a) and (b), 13, and 14—Shapland and Petter, Ltd., Barnstaple	102 0 0
Items 24 to 36—Shingleton, A. J., Exors. of, Kensington High-street, W.	(Not stated)
Items 8 (a) and (b), 15, 16, and 19—Simpson and Sons, Ltd., Halifax	62 0 0

STOKE NEWINGTON.—For the reinstatement trenches opened by the Board within the borough Stoke Newington, for the Metropolitan Water Board. Griffiths, W., and Co., Ltd. (accepted) as per schedule of prices.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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OUR ILLUSTRATIONS.

The Board of Trade New Offices Competition. The Main Front towards the Victoria Embankment, and Ground Plan of Design by Mr. T. Edwin Cooper, F.R.I.B.A.; View and Elevation of the same Façade with a Detail; also two chief Plans and Sections of the Design by Messrs. H. V. Ashley and F. Winton Newman, F.R.I.B.A.

Portals from San Gregorio, Valladolid, and San Pablo, Valladolid, and Retable, Saragossa (del Pilar), by Forment, illustrating paper on the Architectural Sculpture in Spain, by Mr. Andrew N. Prentice, F.R.I.B.A., read last Monday at the Royal Institute of British Architects.

TIE-RODS AND WALL-ANCHORS FOR BUILDINGS ON WEAK FOUNDATIONS.

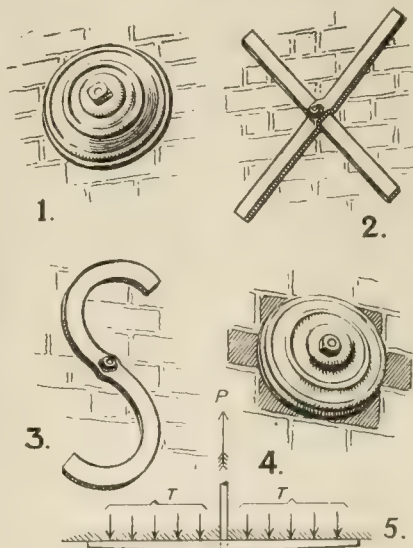
In London and many other towns built on alluvial soil, it is no uncommon thing to find old buildings whose bulging walls have been saved from collapse by means of wrought-iron tie-rods judiciously inserted at the upper floor levels. Frequently this method of securing dilapidated walls is not only expeditious, but economical, whilst many buildings, otherwise unsafe, have their useful term of life greatly prolonged.

The tie-rods, generally $\frac{3}{4}$ in. or 1 in. diameter, screwed at each end, are inserted at right angles to the bulging or overhanging wall. They are placed for preference under piers, and not under or over window openings, a good position being some 18 in. or so from the quoin angles, if the building is detached. Where the floor-joists run parallel to the rods, there is no difficulty in getting the latter through, the walls being simply pierced where necessary by means of the bricklayer's chisel. Where the rods have to cross floor-joists, the latter should be notched as slightly as possible, and, preferably, near to the supports, so that they may not be weakened more than is absolutely necessary. When inserted, the rods will then be almost in contact with the under side of the floorboards. At each end of the tie-rod, as near as may be to the bulged or overhanging part of the wall, a bearing-plate or "wall-anchor" must be placed.

The forms usually met with in the London district are either:—(1) A circular cast-iron plate from 9 in. to 12 in. diameter, and about $\frac{1}{4}$ in. thick at centre. (2) Two wrought-iron bars about 2 in. by $\frac{3}{4}$ in., or 3 in. by $\frac{1}{2}$ in., placed in the form of a St. Andrew's Cross; or (3) A wrought-iron bar of similar dimensions, forged into the shape of the letter S, to indicate, as once suggested by an unprofessional friend, that the building so treated is "safe." Whichever form is selected, a hole is prepared at its centre of figure, through which the screwed end of the tie-rod is passed, and a square nut enables the plate to be closely clamped to the wall. Usually the plate is not bedded on mortar; but it is suggested that, after tightening up, a neat pointing of Portland cement between the plate and the brickwork would not only insure more perfect contact and bearing, but would also help to prevent corrosion of the ironwork where it cannot be got at for repainting. The objection urged against the method here described is that these plates disfigure any building to which they are applied, and it is generally understood that they detract from the market value of property which exhibits them; not merely because of the impaired appearance (many of these

buildings never were noted for their appearance); but on account of the indication that the main walls have settled, and therefore, presumably, may be liable to further movement.

It must be admitted that the design of these plates leaves much to be desired from both the scientific and the artistic stand-



points. Taking the common type of cast-iron plate, which exhibits a nauseating repetition of most commonplace design, its chief structural fault is that it has far too little grip of the brickwork. In the worst case, a 9 in. plate will not more than cover three courses of bricks, including two stretchers and two headers, the centre header being cut away for the tie-rod. (Fig. 4.) This gives a perimeter of 2 ft. 3 in. only, upon which frictional resistance to slipping through of the bricks can be expected: for in bad brickwork the perpendicular joints are often nearly devoid of mortar. Owing to the fact that in ordinary bonding these joints generally run directly through the wall, whatever its thickness may be, it will be seen that the block of brickwork grasped by the plate might be pulled inwards, without giving much support to the surrounding work. This is especially liable to happen in old and dilapidated walls, where the mortar, originally of poor quality, has largely perished through age and weathering. The same fault is observable in the larger cast-iron plates, which never grip more than four or five courses of bricks. The only departure one recalls from the ordinary circular casting is a five-lobed design, somewhat resembling a stiffly-conventional Tudor rose with angular petals; but only five courses of bricks were grasped.

Turning now to wrought-iron specimens,

it will be seen that if they are assumed to bear evenly upon the face of the wall, the pull of the tie-rod when screwed up will throw them into a state of stress similar to that of a double cantilever (see Fig. 5), which is exemplified in the case of a concrete foundation supporting a column or stanchion; except that in lieu of the vertical pressure of the column, we have the horizontal pull, P , of the tie, whilst the vertical reaction of the earth is replaced by the horizontal outward thrust, T , of the wall, the pull and outward thrust being equal and opposite. An elementary knowledge of Mechanics will enable us correctly to design such a beam. An economical and efficient design will be deeper than it is broad, and from a maximum depth at the centre of its length, it will taper towards each end. Its depth will be at right angles to the face of the wall. Comparing theoretical considerations with the examples provided by our modern smiths, we usually find all first principles ignored. The bar is placed flat against the wall instead of edgewise, thus giving the minimum resistance to bending, and allowing its extremities to spring away from their work. The bar is usually of the same width and thickness throughout—a wasteful misuse of metal, which also gives the bar a clumsy and unfinished appearance. Moreover, just where the greatest bending stress occurs, the bar is weakened by unskilful forging, or by the total omission of forging around the hole required for the tie-rod. The utter lack of artistic merit exhibited by these wall-plates is as much due to the radically defective design just described, as it is to an entire want of finish, and an absence of the least attempt to refine or ennoble their form by any of that enrichment to which wrought-iron lends itself so kindly under the hand of the sympathetic workman.

At this point it is refreshing to turn from these crude productions of our modern rolling-mills and smiths, to the admirable examples which meet one on every side in Flanders. A brief consideration of a few typical specimens will soon convince one of the keen scientific insight, as well as of the masterly artistic ability with which they were lovingly fashioned. Even the apparently superfluous scroll-work is made to serve a constructive purpose by giving the anchor an increased grasp of wall surface. However modest the forging, one invariably finds it has a good grasp of the brickwork. It is generally not less than 3 ft. long, embracing 12 or more courses of bricks. Square in section, or deeper in the direction of the bending stress (as in Figs. 6 and 8), it is gently tapered off towards the ends with a refinement rivaling that of the entasis of a column. Nor is the craftsman content with this. He does not leave his work until he

has embellished it with some little scroll or twist—perhaps a neat application of a simple moulding, or even a few chisel-marks struck decoratively. In fact, the builder was not ashamed of these ties and their adjuncts; rather did he delight in demonstrating that his building was well-knit together.

On the treacherous soil of the Netherlands, where piled foundations were often a necessity, it became highly desirable to so construct the building that, in the event of settlement, the lofty walls should be in no danger of falling. Hence we find that at every floor level, and often through gabled roofs as well, iron tie-rods were inserted when the building was erected, and the wall-anchors were eagerly seized upon as opportunities for the display of ornament. A first visit to Belgium or Holland will be a revelation to many. The old smiths simply revelled in the design of these anchors. Their variety is endless. Initial letters, monograms, ciphers, and other symbolical devices are common, whilst foliage and flowers were tastefully introduced in the best examples. Buildings are often dated by anchors, fashioned into figures denoting the year of their erection. It is recorded that sixty-eight different sets were found in Ypres alone about the middle of the last century. Their design is always appropriate and interesting, the workmanship masterly, and often exquisite. From the 15th to the 18th centuries the use of these tie-rods and wall-anchors seems to have been quite general in all kinds of brick buildings in Flanders. One sees them on the world-famed town-halls and belfries, as well as on the fronts of the humble street-dwellings along the canals. Their use is even continued to the present day in buildings of considerable pretensions, and one finds, as a consequence, that the walls are far less liable to get into a cracked and dangerous state than are walls of buildings erected without ties.

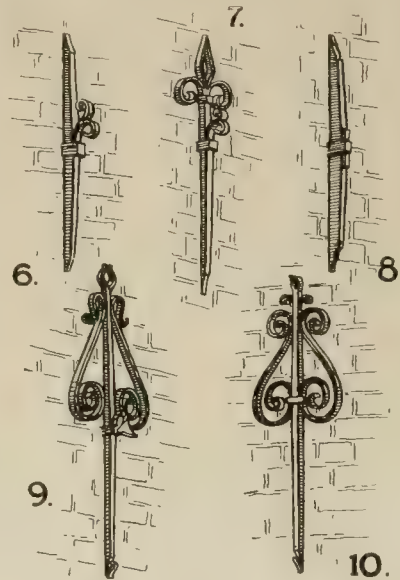
Previous to the last century, screwed bolts and screw-threads were practically unknown in constructive work, the necessary tackle for cutting the threads being then beyond the outfit of an ordinary smith. Hence we find that where tightening up had to be done, some arrangement of keys, or cotters, was employed. In wall-ties, therefore, the ends were forged with suitable sockets, outside the walls, and through these the wall-anchors were passed, all tightening being done either by small keys driven into the sockets (as in Fig. 8), or by a cottered joint in the tie within the building. Even these necessary keys and sockets were made to serve an ornamental purpose in the design.

Without merely copying these fine old Flemish wall-anchors, there is still a wide scope for an intelligent and legitimate use of wall-ties in modern buildings erected upon unstable foundations. For instance, it is well known that upon soils such as our London clay, especially where it occurs on a hillside, it is necessary to excavate to considerable depths, and to employ heavy concrete foundations for the most commonplace buildings, if the owner is to be protected against all risk of settlement. For a sum representing but a fraction of the cost of such foundations it would be possible securely to tie the walls at floor levels in such a way that the otherwise expensive foundation work might be considerably curtailed. With good design and the use of modern materials the wall-anchors might be rendered no less decorative than the wrought-iron work frequently seen suspending the canopies over entrance doors of suburban villas.

If wall-anchors are considered inconsistent with the design of the building, or for other reasons are thought un-

desirable, it is still possible to attain the same end by a well-considered employment of hoop-iron bond. The hoop-iron, if well embedded in a Portland-cement mortar joint, will be effectually protected from rusting, and by bending it over at right-angles, all quoins may be reinforced, the cross- and party-walls being tied to external walls by suitable strips of hoop-iron hooked over the running lengths in the latter.

In place of unsightly nuts screwed to the ends of projecting tie-rods, it would be possible to employ ornamental forged heads, any necessary tightening up being done by means of right- and left-handed screw shackle-joints on the rods within the building. In cases, however, where tie-rods are inserted whilst the building is being erected, very little tightening up is required; in fact, on the Continent the rods are sometimes merely bolted or otherwise secured to the wood framing of the



floors, without being passed right through the building.

Were an apology needed for the use of iron ties, ample authority could be found in some of the finest buildings of the Middle Ages, as well as in Renaissance architecture. The iron ties in the choir arcade of Westminster Abbey and at Peterborough Cathedral are well-known examples, whilst it has been said that when first erected, Salisbury Cathedral tower was the finest piece of blacksmithing in Europe, bound together as it is at various stages with bands of ironwork, both within and without the masonry. Nor did Sir Christopher Wren consider it unworkmanlike to employ quantities of ironwork in chains, ties, and cramps, it being stated on excellent authority that St. Paul's Cathedral is literally laced together with iron. When it is remembered that many of our finest cathedrals stand on alluvial soil, and that when they were erected the builders had neither the knowledge nor the means at their disposal for putting in adequate foundations on such soils, it will be seen that the judicious use of iron ties gave them a ready and simple means of making their buildings secure.

Finally, as a simple and effective method of dealing with bulged and leaning walls, especially in the case of ancient buildings which it is desired to preserve, as far as possible, in their original state, a few well-placed tie-rods, with suitable wall-anchors, will often obviate the necessity for demolition and rebuilding. Instead of the modern English plan of employing flat bar-iron for these latter, a specially-designed forging would be not only more efficient,

but more artistically effective. Calculation shows that rolled channels, 2½ in. by 1 in., placed flat against the wall, would be four times as strong as 2 in. by ¾ in. flat bar, and about ten times as stiff to resist bending; whilst their sectional area, and, therefore, their cost, per foot run, would be merely some 60 per cent. greater. They would also lend themselves to effective ornamental treatment if their flanges were cut off towards the ends, the flat web being split, opened, and fish-tailed, or scrolled, according to the fancy of the designer.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The eighth meeting of the Royal Institute of British Architects for the present session was held on Monday evening at 9, Conduit-street, W., the chair being occupied by the President, Mr. Ernest Newton, A.R.A. Mr. E. Guy Dawber announced the decease of the following members: Mr. Henry Dawson, of Cannon-street, E.C., and Purley, elected a Fellow in 1869; Mr. George Herbert Burston, of Bognor, elected an Associate, 1910; Mr. John James Smith, of Bideford, elected an Associate, 1882; and Mr. Frederick Robt. Edwin Sladdin, of Capetown, elected a Licentiate, 1912. The President stated that they were all aware that, owing to the war, no prizes or studentships would be awarded during the present year. He had, however, the pleasure to make two presentations—that of the Ashpitel Prize to Mr. George Eric Francis, as the student who had distinguished himself most highly in the Final Examination, held during the year; and the Pugin Silver Medal to Mr. William Cecil Young, who won the Studentship last year and had since fulfilled the conditions attached to its holding to the satisfaction of the Council. Both students were heartily cheered as they came forward to receive from the President the awards.

ARCHITECTURAL SCULPTURE IN SPAIN.

An interesting paper on this subject was read by Mr. Andrew M. Prentice, F.R.I.B.A. The lecture was illustrated by numerous sketches and water-colour drawings by the author, photographs hung on the walls, and by many lantern-slides. Three of these illustrations are reproduced by us elsewhere. Premising that while Spain had produced native talent of a high order, although no Spanish sculptor had risen to the fame of a Donatello or a Michael Angelo, Mr. Prentice rapidly showed the development of architectural sculpture in the Peninsula, from the days of the Visi-Goths, and their conquest by the Moors in 711 and subsequent years. Scattered along the north-west coast are remains of churches of the 11th century, containing portals, fonts, and tombs of great interest, if not of very great merit. With the commencement of the 12th century architecture received a fresh impulse. The influence of the great ecclesiastical order of Cluny was soon felt, and the Romanesque style gradually developed. The imagination of the Romanesque stone-cutters lavishly displayed on monuments and in churches may be admired on the double capitals in the cloisters of Santo Domingo de Silos. They are all richly carved with Bible subjects, with beast forms, fantastic monsters, and familiar scenes from human life. With few exceptions the new churches were of moderate size. Their type was that of the Basilica, with well-marked transepts, and occasionally at the crossing a lantern dome was added. At Toro, Zamora, and Salamanca this form of dome was further developed. Santiago Cathedral, built after the same form of plan as St. Sernin at Toulouse, was the outstanding work of the new movement. Its wonderful Puerta de la Gloria is described by G. E. Street as one of the grandest glories of Christian art. A full-size plaster reproduction of this doorway is in the South Kensington Museum. At the Church of San Vicente, at Avila, there is another beautiful portal, not so well known, to which additional charm is imparted by the intro-

duction of quaint terracotta statuettes. The nave of this church is in the pure Romanesque style; indeed, the Romanesque style lasted longer in Spain than anywhere else, and continued till as late as the 14th century. In France the tremendous activity of the 13th-century architects soon made an impression on Spanish architecture. The cathedrals of Leon, Toledo, and Burgos came into existence modelled on buildings such as Amiens and Rheims. The creative activity of the sculptors, stimulated by studies from life, produced work which deserves to rank with the best French examples, as, for instance, the figures on the portals of Leon, Burgos, and Tarragona cathedrals. The sculptures at Burgos Cathedral are alone sufficient to indicate the proficiency of the stone-carver's art; those in the cloisters bear traces of colour. The earlier carvings belong to the opening years of the 13th century. Fortunately, up to the present, they have not suffered from restoration. The colours are faded, but the vivid reds and blues, so much used by the Moorish decorators, can be easily seen, together with traces of gilding. Up to this time Spain was content to retain the services of French sculptors as her teachers and advisers. In the last third of the 15th century, however, Flemish carvers were induced to visit Spain, and brought about a transformation of the art. In architecture the geometric severity of early Gothic forms gave way to more flowing and sympathetic lines, a taste had arisen for rich and realistic ornamentation, and the mental activity, excited by the importation of new styles, together with the increase in technical dexterity, led to the introduction of many remarkable buildings. Amongst the many Flemish architects who were brought over to Spain at the end of the 15th century, the names of Enrique de Egas and Juan Guas stand out most prominently. Ferdinand and Isabella commissioned the latter to erect the convent church of San Juan de los Reyes, at Toledo, to commemorate the defeat of the Portuguese at Zoro in 1476, and at the same time they meant this church to be their last resting-place. Mendoza, Primate of Spain, obtained the services of the architect Juan Guas to design the family palace at Guadalajara. Juan Guas was also assisted by his brother Enrique, and the latter no doubt is responsible for the fantastic design of the patio. At Valladolid are two extraordinary examples of this grotesque style, which the Spaniards designate the *Estilo Monstruoso*—namely, the façades of San Gregorio and San Pablo (both illustrated in our central plates). The College of San Gregorio, completed in 1496, was founded by the Bishop of Valencia as a sort of founding hospital. The details, representing lions and figures of wild men, bear a strong resemblance to similar objects at Guadalajara, and would almost suggest that this is the work of the younger Guas. In the centre panel there is a large heraldic tree supporting a royal coat-of-arms with lions, and surmounted by rich canopy work. On either side of the doorway are life-size warriors, and there is a relief over the lintel, representing the founder kneeling and dedicating his good work to St. Gregory. The other façade—viz., that of San Pablo—might be attributed, although it is only a conjecture, to Juan Guas, the brother of Enrique. The refined details are quite as graceful as those at San Juan de los Reyes, at Toledo. This is one of the richest specimens of a 15th-century doorway in Castille. The whole sparkles with original fancy. Here the sister arts of sculpture and architecture blend in a most pleasing manner, although the general effect, perhaps, may be open to criticism. A certain amount of confusion is evident, owing to the interlacing lines of the curved stone mouldings; but, even so, the architectural details breathe an artistic spirit of vigour and beauty. With the advent of the 16th century native architects arose in Spain, notably the Hontanons, father and son, and when the idea of building a new cathedral at Salamanca arose, after considerable discussion and great delay, Juan de Hontanon was chosen to be the architect. After much deliberation it was decided not to pull down the old cathedral, and the new

structure rapidly rose on a site immediately adjoining. The west front, with its profuse adornment of sculpture, was the first portion of the fabric to be erected, developing later lofty arches, slightly reminiscent of Peterborough. The centre arch is enriched from top to bottom with fine medallions, delicate ornamentation, and statues, executed at a later date by Juan de Juni and Becerra. To the English mind the whole thing is overwrought and extravagant. Some twenty years later, after the erection of Segovia Cathedral by the same architect, the Gothic style was abandoned in favour of the new Plateresque style, and forms of the early Italian Renaissance. During this transition the Mudéjar style came into existence. The door of the Escuelas Menores at Salamanca, characteristically set in a blank wall, is well worthy of note as a specimen of civic architecture. Above the two archways forming the entrance are displayed three escutcheons and a triple crown, and the heads of St. Peter and St. Paul. These examples appear framed in a profusion of detail, in which the Gothic and Plateresque styles are charmingly assimilated. Again, at Zamora may be found a fragment of an ancient mansion, known as the house of the Momos. Here the Saracen influence is strongly pronounced. A simplification of this form of doorway may be frequently seen in the principal towns throughout Castille, some examples having square-headed doors, with deep lintels formed out of one stone; but all are surrounded by the same type of moulded label, within which the ornamental features are concentrated. In Madrid is another beautiful doorway illustrating this interesting point. It belongs to the Hospital de la Latina, built by Hassam the Moor, who had evidently become Christianised, as his statue depicts him handing alms to a nun. On the discovery of the New World architecture developed a strong Renaissance feeling. A new style, the Plateresque, came into being. Spanish sculptors who had studied in the studios at Rome took part in the movement, and vied with the Late Gothic sculptors in decorating buildings with a new garb. The old Gothic constructive principles still remained, the new birth being simply a change into Classic detail of Gothic ornament. The sculptor Philip Vignari, or Borgona, was one of the first to come under the influence of the Plateresque. We find him in the capacity of architect undertaking the rebuilding of the lantern dome of Burgos Cathedral, a marvel of rich Renaissance detail, cleverly mixed with the Gothic. Other sculptors who carried out work at Burgos were the Colonia family and Deago and Gil de Siloe. To the student of the Plateresque the buildings in Salamanca would perhaps most strongly appeal. It was in that city that Diego de Deza, Archbishop of Seville, added the fine Plateresque façade to the Church of San Esteban, commonly called Santo Domingo. Previous to this the well-known façade to the University Library at Salamanca had been erected to the supposed designs of Enrique de Egas. At Toledo, Cardinal Mendoza, just before his death, gave instructions for the erection of the Hospital of Santa Cruz. The Cardinal Princes of Spain founded many large hospitals during the reign of the Catholic kings, some of which still exist at Seville, Toledo, Valladolid, and Santiago. The finest and most perfectly preserved carvings are undoubtedly to be found in the interiors of the great cathedrals, especially in the numerous sepulchral monuments in Spain. Having described many of the royal tombs, Mr. Prentice proceeded to discuss the altar-pieces, or Retablos Mayors. From a very early date the choir of a Spanish cathedral became located in the centre of the building immediately to the west of the transept crossing, and it usually occupied about three bays of the nave. Facing it, on the east side of the crossing, was the Capilla Real, placed in that part of the building which formed the choir in an English cathedral. The spaces occupied by the choir and the Capilla Real were enclosed on three sides by lofty stone screens. It seems, therefore, fitting that the large expanse of blank wall

on the outside of the choir, called the *Tras-coro*, should be utilised for the display of sculpture. The peculiar position of the choir was owing to the admission of the laity to the transept in front of the altar. Fine *Tras-coros* are those in the Cathedrals of Saragossa, Palencia, Leon, and Avila. The back of the Capilla Real in the cathedrals, called the *Trassagrario*, was often richly decorated. In Burgos Cathedral it was completely covered with sculpture. The altar-pieces of Spain are the distinguished expression of the country's art, and their construction gave endless employment to the architect, the sculptor, and the painter. In no other country have their works developed and assumed such huge proportions. At first we find them as screens, dating back to the 12th century, when small portable altars or diptyches were used by generals to pray in front of before going into battle. The Romanesque churches contain a few Retablos of moderate size, designed on simple lines. As they developed in scale and importance, the sculptured panels gave place to painted ones, and the many compartments into which they were divided became enclosed in Gothic frames and traceries, richly painted and gilded. Retablos with painted subjects taking the place of sculptured panels, may be found at Salamanca and at Avila. This type of Retablo, however, had a short existence, the inherent Spanish feeling for the realistic, strongly countenanced by the Church, revived the old tradition of combining both arts. The sculptured panels appeared again, and at the end of the 15th century the carvings were entirely coloured and gilt. The Retablo at Tarragona Cathedral is one of the finest in Spain; it is the masterpiece of the Catalan architect, Pedro Juan, who afterwards was invited to Saragossa to design the altar-piece for the Seo Cathedral. In the same city are two very beautiful Retablos by Damien Forment, who was born in Valencia and studied in Italy. Whether he was a pupil of Donatello or not, he must have acquired his knowledge of carving under one of the greatest masters. The main fact remains that Zaragoza is fortunate in possessing in the cathedral of the Pillar (see illustration) and in the Church of San Pablo, specimens of his very best work. They are both noteworthy for their bold design, restraint in size, and the Italian feeling imparted into their sculptures. Another prominent feature is that, in the canopy work and decoration of the broad frame surrounding the Retablo, Forment remained faithful to the Gothic tradition. That the Retablo of the Pillar must have been a polychrome is evident from the presence of colour on two of the figures, placed on the right and left of the altar, ruined, no doubt, by the injudicious washing of the alabaster reliefs in later times. The Retablo of San Pablo, although presenting the same boldness of outline, suffers under a close inspection. The carvings are in this case all in wood, but they are wanting in delicacy and refinement. With the advance of time huge Retablos rapidly arose, soaring up to prodigious heights. All that had been expressed in earlier examples, by painted groups on panels, were translated into sculptures. The general impression conveyed to the mind, on observing these Retablos, is less pleasing, and the eye is fatigued on attempting an examination of their detail. The most successful example of these huge works is the Retablo at Toledo Cathedral, in the Capilla Real, designed by Philip de Borgona. The composition presents a playful variety of form, combined with a vigour of detail that is very satisfying. Wood-carving as a favourite art remained in Spain for several centuries, after the Spaniards learned to excel, under the skilled tutelage of the great masters from Germany and Flanders. After an examination of these magnificent works, it seems sad to realise that the glory of Spain has departed. Whether we wander through the deserted cities of Castile or make a pilgrimage to some remote cathedral, it is manifest that in matters of art this once powerful empire has never ceased to exist, but still continues to rouse our wonder and admiration. Amidst

crumbling decay still stand the monuments of Spain's greatness.

Professor W. R. Colton, R.A., proposed a vote of thanks to Mr. Prentice for his charming and carefully-thought-out analysis of Spanish sculpture. From a sculptor's point of view this art suffered much from the terrible overcrowding of beautiful detail and the application of gilding and colour. In its barbarity and profusion of enriched ornament the work was impressive and, in its way, effective; but he could not help feeling regret that the artists did not display more reticence and restraint. Then, again, the scale was too small, from our viewpoint. One of the most distinguished sculptors of the present day obtained his inspiration from a profound study of this Spanish work, and he could not avoid having a certain admiration for the art, although he could not agree with its principle.

Professor Gerald Moira, in seconding the motion, observed that it was obvious that decorative painters, the artists in colouring flesh and garments, and the gilders, came by their own during the reign of the Plateresque style in Spain. The painful overcrowding was due to a desire to illustrate every detail, and prevented the execution of an artistic production.

Mr. Arthur T. Bolton said that, speaking from his own experience, Spain was not a country for young architectural sculptors to visit; when a young man had already studied in France and Italy he would, however, find a tour in Spain extraordinarily helpful and suggestive. The real art of Spain was painting. In the north of Spain, at Orvieto and elsewhere, extremely interesting architectural work was being carried out in the Romanesque style when Gothic art came in and killed the old feeling and tradition. As a whole, the country was extraordinarily rich in screens and redoses, the latter being entirely gilded and enhanced with painting. The intense craving for realism made the work of both painters and sculptors alive.

Mr. J. D. Crace referred to the magnificent series of sketches shown by Mr. Prentice. Spanish works in wood-carving exhibited great vigour in execution, a cleverness in the arrangement of draperies, and much skill in the rich painting. A few carved and coloured Spanish figures could be examined at the Victoria and Albert Museum. The architecture would have gained much had there been less crowding of detail and more reticence in the carving. The employment of colour was in Spain seen at its best, and was remarkably effective. He must admit that the actual technical execution of the sculpture never attained the perfection seen in Italy and in France.

In putting the vote of thanks the President referred to Mr. Prentice's valuable book on the architecture of Spain, and said that its influence and that of the delightful lecture he had given them that evening would be to induce our students, when the war was ended, to seek fresh inspiration in Spain. He trusted that their impressions would be thoroughly digested and assimilated, and that on their return these young architects would give us truly British works of art.

THE SOCIETY OF ARCHITECTS.

The monthly meeting of the Society of Architects was held on Thursday evening in last week at 28, Bedford-square, W.C., and was very numerously attended. The President, Mr. E. P. C. Monson, F.R.I.B.A., occupied the chair. Messrs. John Anderson, F.N.Z.I.A., Jesmond Chambers, Hamilton, New Zealand; Guy Wilfred Jack, 217, Caxton House, S.W.; Charles Harry Leonard Varcoe, 17, Durnford-street, East Stonehouse, Plymouth; and Charles Alfred Vautier, F.N.Z.I.A., Jesmond Chambers, Hamilton, New Zealand, were elected as members.

THE CONSTRUCTION AND PROTECTION OF BUILDINGS IN RELATION TO FIRE.

A paper on this subject, illustrated by numerous lantern-slides of stone, brick, timber, and reinforced-concrete buildings in

London, Glasgow, San Francisco, after injury by fire, was read by Mr. A. Alban H. Scott, Vice-President, and will be found in extenso on p. 226, *post*.

Mr. W. H. James, in proposing a vote of thanks to the lecturer, advocated the extension of the provisions and machinery of the London Building Acts, when codified throughout the kingdom. Even the revised Building Acts needed strengthening, however, in many points. In most provincial cities the regulations for theatres allowed of the construction of veritable death-traps, both for the audience and those behind the scenes, should fire unfortunately break out. A frequent defect in provincial by-laws was that factory doors were allowed to open inwards, instead of outwards. The heavy wooden girders formerly adopted were fire-resisting to a far greater degree than iron or steel girders of equal strength, for the protective covering applied to metal structures was easily detached.

Mr. Bylander, in seconding the motion, said the London Building Acts, with their definite requirements, were of great value to the building owner and architect. The protection of all ironwork against fire should be insisted upon, and it was risky to place reliance on corbels for carrying loads. The fire protection round a column should be firmly secured to it, and building over shop-fronts needed careful watching. The London Building Acts ought to be recast—strengthened, revised, and, above all, codified. The actual controls of buildings should be estimated as stringently upon the horizontal as upon the vertical dimensions for fire protection. He supported the use of sprinklers in factories; but where they were employed falls should be provided not less than 15ft. above the highest sprinkler. Projecting cornices and stones were often insufficiently protected against falling when fire broke out.

Mr. Edwin O. Sachs argued that there was an urgent need for codification of the London Building Acts, and he supported the suggestion that they should be made the basis of legislation throughout the kingdom. The word "fireproof" was a misnomer; he was pleased that Mr. Alban Scott had substituted for it the more correct term of "fire resisting." The encasement of all steel and iron work with concrete and the building in of steel casing, were matters of the utmost importance. He would say to those equipping premises for fire prevention, avoid all powder extinguishers and hand grenades in glass vessels. Hand-buckets and hand-pumps cost less, were more readily available, and were more effective than any form of patent extinguisher.

Mr. S. G. Gamble, of the Metropolitan Fire Brigade, observed that the lamentable loss of life from fires in London was nearly always due to very small outbreaks or to lamp accidents. It was noteworthy that very few deaths occurred from fires at a height of 12ft. to 14ft. from the pavement level. The district surveyors in the Metropolis were appointed from a well-trained class and were invested with very wide powers, and this excellent organisation was unknown in provincial cities, although many provincial building codes were in many cases as efficient as the London Building Acts. In many towns the members of the corporation were very jealous lest the officials should gain too much administrative authority, and especially objected to the discretionary power which enabled the district surveyors of the Metropolis to administer the Building Acts so smoothly. In fixing sprinklers care should be taken to protect them from injury from loads carried on employees' heads or shoulders. Great care should be taken not to employ fusible solder in solution where a gas-jet might be lighted beneath it. Sand was useful in certain cases for checking fires, but it needed periodical inspection, lest it should become caked and useless when required on a sudden emergency.

Mr. Ellis Marsland remarked that the essential point in steel construction was to effectively protect all metal. Terracotta was useless for this purpose, and it exploded and burst under the action of heat and water.

The best aggregate for concrete, from the fire-resisting point of view, was coke breeze. Factory and warehouse windows should be set in steel or iron frame, and wirework should be embedded in the glass.

Mr. J. H. Pearson observed that the blocking up of staircases and landings of factories and warehouses with cases and packages should be rigidly prohibited. If fire broke out such obstacles proved death-traps.

In putting the vote of thanks the President expressed the opinion that no provincial code of by-laws was so well devised or so smoothly administered as were the London Building Acts.

Mr. Alban Scott, in reply, said the weakest features of steel construction were the joints, and the architect could not too closely inspect the way in which these were protected by casing. In most cases elevated tanks in the roof were only raised some 12ft. to 15ft. above the sprinklers, and had but a capacity of some 1,250 gallons, which he regarded as but a slight additional protection. The use of coke breeze as an aggregate for concrete was admirable from a fire-resisting standpoint, but constructionally was not stable, as it induced corroding action in the embedded steel rods.

BUILDING BY-LAWS AND A COURT OF APPEAL.*

By H. D. SEARLES-WOOD, F.R.I.B.A.

The resolution that was passed at the Royal Sanitary Institute Congress, in 1913, was: "That the Council of the Royal Sanitary Institute be requested to urge on the Local Government Board the desirability of the establishment by the Board of a tribunal of appeal from the decisions of local authorities on points relating to practices in the working of the Building By-laws, and should they consider that Parliamentary sanction is necessary for the formation of such a tribunal, to take steps to obtain such sanction."

I have been asked to read a paper on this tribunal of appeal, and I gladly avail myself of the opportunity, as I think that there is in some minds a misapprehension of the purpose for which this tribunal is to be appointed. The suggestion was that, in the event of a difference of opinion arising between the authority and the building owner as to the suitability of his design and the construction of the by-laws, the building owner should forward his drawings to the Local Government Board, with a statement of the argument he put forward why the local authority should pass them, and the local authority should state their reason for objecting; the decision of the Local Government Board should be binding on all parties, and there should be no reason why the matter should not be dealt with promptly and with little trouble. I am aware that the Local Government Board always decline to give a legal interpretation, as that is a matter that the Courts must settle; but this reference that I suggest would in most cases be as to the reasonableness of the objections, and would not necessarily involve the legal construction of the by-laws, but simply the usual reading of it, with which the Local Government Board would be familiar.

It appears to me that such a tribunal would be more impartial than any local court, and, being a technical body, the decisions would carry more weight, and in course of time these decisions would form a series of precedents which would be of great assistance to both local authorities and building owners. There has been a tribunal of appeal in the London Building Acts for many years, and it is constituted, in the 1894 Act, as follows:

"One member shall be appointed by a Secretary of State. One member shall be appointed by the Council of the Royal Institute of British Architects. One member shall be appointed by the Council of the Surveyors' Institution. No member or officer of the Council (i.e., London County

* A Paper prepared for the Meeting of the Institution of Municipal and County Engineers at Westminster, on February 5, 1915.

Council) shall be a member of the tribunal of appeal. Members of the tribunal of appeal shall be appointed for a term of five years, and any such member shall be eligible for reappointment. It shall be lawful for the Lord Chancellor, if he think fit, to remove for inability or misbehaviour, or other good and sufficient cause, any member of the tribunal of appeal. Upon the occurrence of any vacancy on the tribunal of appeal, or during the temporary absence through illness or other unavoidable cause of any member thereof, a Secretary of State, the Council of the Royal Institute of British Architects, or the Council of the Surveyors' Institution (as the case may be), whichever of them shall have appointed the member of the tribunal whose place shall be vacated, shall appoint forthwith a fit person to be a member (either temporary or permanent) of the tribunal, in lieu of the member whose place is vacated, or who is temporarily absent as aforesaid. Each member of the tribunal of appeal shall be entitled to such remuneration, either by way of annual salary or by way of fees, or partly in one way and partly in the other, as a Secretary of State may from time to time fix. It shall be lawful for the tribunal of appeal to appoint such clerks, officers, and servants as they may find necessary, who shall be paid such salaries as shall be determined by the Council, and to provide offices and to obtain such professional advice and assistance as they may find necessary. It shall be lawful for the Council (i.e., L.C.C.) to defray the expenses of supporting any decision of the Council or of the superintending architect or of their engineer or of a district surveyor by counsel and witnesses before the tribunal. It shall be lawful for the tribunal at any time to state, and the tribunal shall, if ordered by the High Court, or a judge thereof, on an application in a summary manner made by any party to the appeal, state a case for the opinion of the High Court on any question of law involved in any appeal submitted to them. The High Court shall hear and determine the question or questions of law arising on any case stated by the tribunal of appeal, and shall thereupon reverse, affirm, or amend the determination (if any) in respect of which the case has been stated, or remit the matter to the tribunal of appeal, with the opinion of the Court on the case stated, or may make such other order in relation to the matter as the circumstances of the case require, and may make such order as to the costs of the case and in the High Court as to the Court may seem fit. The tribunal of appeal shall, subject to the provisions of this Act, have jurisdiction and power to hear and determine appeals referred to them under this Act. For all the purposes of and incidental to the hearing and determinations of any appeal the tribunal shall, subject to any rules of procedure duly made, have power to hear the Council (L.C.C.) and the parties interested either in person or by counsel, solicitor, or agent, as they may think fit, and to require the production of any documents or books, and to confirm or reverse or vary any decision, and make any such order as they may think fit, and the costs of any of the parties to the appeal, including the Council, shall be in the discretion of the tribunal. The tribunal of appeal may, from time to time, subject to the approval of the Lord Chancellor, make regulations consistent with the provisions of this Act, as to the procedure to be followed in cases of appeal to the tribunal, including the time and notice of appeal, and as to fees to be paid by appellants and other parties. Any order of the tribunal of appeal may be enforced by the High Court as if it had been an order of that Court. All fees and sums of money paid to the tribunal of appeal shall be paid over to the Council and carried to the county fund, and the salaries or fees payable to members of the tribunal and the office and establishment expenses of the tribunal and expenses incurred by the tribunal and the Council in reference thereto shall be defrayed out of the county fund."

I have set out these clauses in full so as to give some idea of the way the tribunal of appeal under the London Building Acts is

constituted. I do not suggest that it should be a precedent for the tribunal of appeal for the Model By-laws, but it has been found to work well in London. One of the points for discussion might well be as to the way in which the tribunal should be constituted. With regard to the arguments in favour of such a tribunal, it seems to me, judging by many of the suggestions that are made in papers on the amendment of the By-laws that there is a wrong impression of the principle upon which by-laws are founded. We are a free people, and there is a common-law right for every man to build as he likes on his own land. The very interesting "Liber Albus" of the City of London, a collection made during the mayoralty of Sir Richard Whittington, of documents, even then ancient, contains FitzAlwyne's Assize of Buildings, written in 1189. It has the following passage on the obstruction of the view from windows: "If any person shall have windows looking upon his neighbour's land, although he may have been a long time in possession of the view from such windows aforesaid, nevertheless his neighbour may lawfully obstruct the view from such window by building opposite the same, or by placing anything there upon his own lands in such manner as may to him seem most expedient unless the person who has such windows can show any writing by reason whereof his neighbour may not obstruct the view from these windows." This shows that the right to build as the owner liked existed in those days.

The by-laws are only concerned with the safety of the public and not of the owner. This is shown by the exempt building clauses, which to some extent are wider in the Metropolitan Building Acts than in the Model By-laws. Before 1875 the by-laws only regarded the safety of the public from two standpoints—that is, fire and stability. After the Public Health Act it was recognised that the sickness of the occupier might be a menace to the public, and the sanitary aspect was added to the other two. The Amended Rural By-laws recently issued, which were based largely on suggestions made by the Royal Institute of British Architects, clearly show the three points of view of the safety of the public. As I read the suggestions made in the various papers to amend the by-laws, this is not the idea of their authors; but they want to make the Building By-laws a complete code of building construction, which is impossible. The Local Government Board have at present before them the London County Council By-laws for Reinforced - Concrete Construction, which, when approved, will, I think, be largely used all over the country for reinforced concrete regulations. Anyone who makes a careful study of these rules will at once see that they require very expert knowledge to construe them, and that it would be hopeless to take a dispute, as to whether the design objected to was properly designed, before the local Courts. And it is with this in view that I strongly urge the formation of an expert tribunal that could give an unbiased opinion that would carry weight in such disputes as are certain to arise. I am quite ready to admit that the knowledge of the stresses and strain in buildings has improved very much of late years, and the ability to calculate these reactions is possessed by a great many officials; but as this form of construction is rapidly coming more and more to the front, and ingenious forms of its application are constantly being designed, it is difficult for those officials, who have so many other duties besides building surveying, to keep abreast with the times. Experience in the carrying out of this form of construction is very essential to the appreciation of new forms of design.

Some people are of the opinion that the time has come when there should be a general Building Act for the whole country. Let us hope if this comes to pass that it may be so drawn as not to stereotype existing methods of construction, but stimulate new and better methods than at present. It might be a good thing to encourage architects to work out the strains and stresses in their structures, by making a law that the

methods of calculating the designs should be submitted to the district surveyor, and, if found correct, the construction should be allowed, and thus do away with all those cast-iron schedules and rules that so often hamper an original design.

The other point that I wish to touch on is the law as to party structures. The rules laid down in the Metropolitan Building Act of 1854, for dealing with the rights of the building and adjoining owners of a party-wall have worked so well that it is surprising no other city or town has adopted the same system, which is, briefly, as follows: Where a building that has party-walls is about to be rebuilt, the building owner serves on the adjoining owner of the party-wall notices, which describe the work that is to be done to the party walls, and in this notice the building owner appoints a surveyor to represent him. If the adjoining owner does not agree within fourteen days of the service of the notice, a difference is said to have arisen, and the adjoining owner appoints a surveyor to represent his interest, and these two surveyors meet and appoint a third surveyor. The first two surveyors then examine the party structure and draw up an award, in which is set out the work that has to be done, and when this award is signed by the two surveyors it is published, and the matter is settled. Should the two surveyors not be able to agree on an award, the third surveyor is called in, and within seven days he has to appoint a day for a hearing, and the three surveyors meet, and any two of them can agree on an award, which, when signed by the two, is published, and becomes a binding document, only to be upset on appeal before a magistrate. The position of the third surveyor is not quite that of an arbitrator, he is only equal in rank to the other two surveyors; but it has been found to work well, and many awards are made by means of the third surveyor which could not be made between the two surveyors in the first instance. The third surveyor, being quite impartial, can complete the award which one of the interested surveyors would not care to sign. This method of dealing with a difficult situation is really a great help to architecture, and some such system should be part of the statute law. At present the law on the subject is that the party structure is common with the two parties, the building, and the adjoining owner; it cannot be touched without the assent of both parties, and there is no means of compelling this consent. It is in this respect that the London practice has such great advantages.

The term "party-wall," though often used merely with the signification of a wall separating adjacent buildings, means in its general sense, and is properly applicable to, any wall which parts or divides adjoining lands, whether built upon or not, held by different owners with regard to ownership and rights of user, the term may be used in four different senses. It may mean: (1) A wall of which the adjoining owners are tenants in common. (2) A wall divided longitudinally into two strips, one belonging to each of the neighbouring owners. (3) A wall which belongs entirely to one of the adjoining owners, but is subject to an easement, or right, in the other to have it maintained as a dividing-wall between the two tenements. (4) A wall divided longitudinally into two moieties, each moiety being subject to a cross-easement in favour of the owner of the other moiety. But the most ordinary and primary meaning of the term is a wall of which two adjoining owners are tenants in common.

The common user of a wall separating adjoining lands belonging to different owners is *prima-facie* evidence that the wall and the land on which it stands belongs to the owners of the adjoining lands in equal moieties as tenants in common, and when a wall has been erected at the joint expense of adjoining owners and held and used by them in common, it seems clear that, in the absence of evidence to the contrary, a jury would be directed to find that the wall and the land on which it stands are held by the two owners as tenants in common. In the

first case, the defects of the law as it stands are that nothing can be done to the wall without the consent of the adjoining owner, and there is no power to compel him to give his consent. If the wall be out of repair and one owner repairs it he cannot compel the other owner to contribute.

In the second case, when the wall is divided into two strips, either strip can be removed without the consent of the

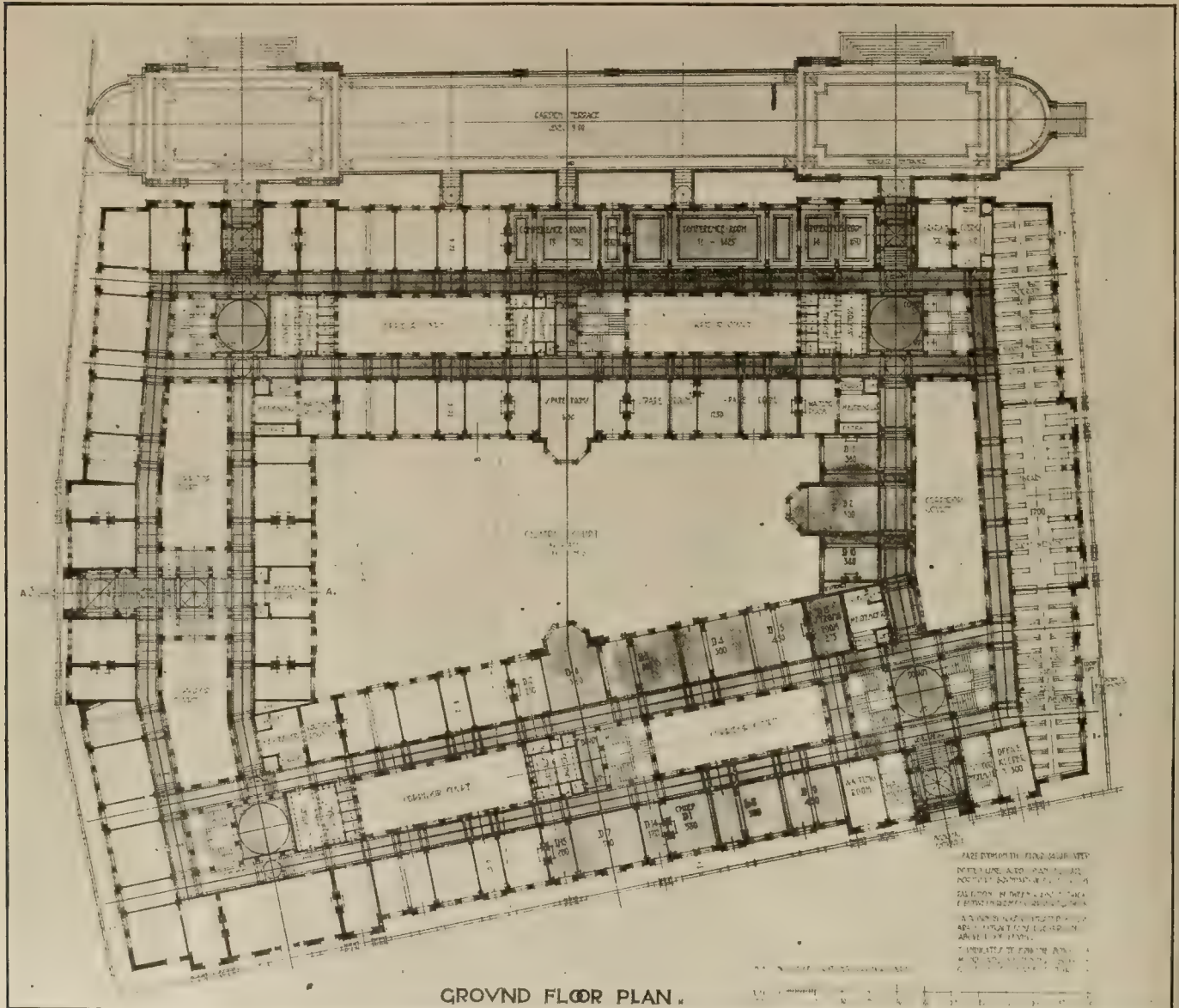
enter upon the servient tenement for that purpose. But in the fourth case, if either party took down his own moiety he would be liable to an action in respect of any damage which might thereby result to his neighbour.

When one of the adjoining owners builds a house so that one of its external walls stands upon the ground of his neighbour, the owner so building will in due time acquire a title to such wall, under the Statute of

Our Illustrations.

BOARD OF TRADE NEW OFFICES COMPETITION DESIGNS.

All the designs submitted in this final competition were reviewed in our leader last week, with illustrations of the selected scheme by Mr. E. Vincent Harris, as well



BOARD OF TRADE NEW OFFICES, THAMES EMBANKMENT, LONDON, S.W.

Design by Messrs. H. V. ASHLEY and F. W. NEWMAN, F.F.R.I.B.A., Architects.

owner of the other strip, and without regard to the efficiency as a party-wall of the other portion. But there may be a right of lateral support. The right of one house to lateral support from an adjoining house generally has its origin in two or more houses having been built by the same owner at the same time. The right to lateral support may also be derived from an express grant, or it may be claimed by prescription. When a wall is a party wall in the third sense—a wall which belongs entirely to one of the adjoining owners, but is subject to an easement, or right, in the other to have it maintained as a dividing wall; or when a wall is a party-wall in the fourth sense—viz., a wall divided longitudinally into two moieties, each moiety being subject to a cross-easement—the owner of the servient tenement is not, unless the duty is cast upon him by express stipulation, bound to repair. The easement being for the benefit of the owner of the dominant tenement, it is for him to do the necessary repairs, and it is considered that he will have the right to

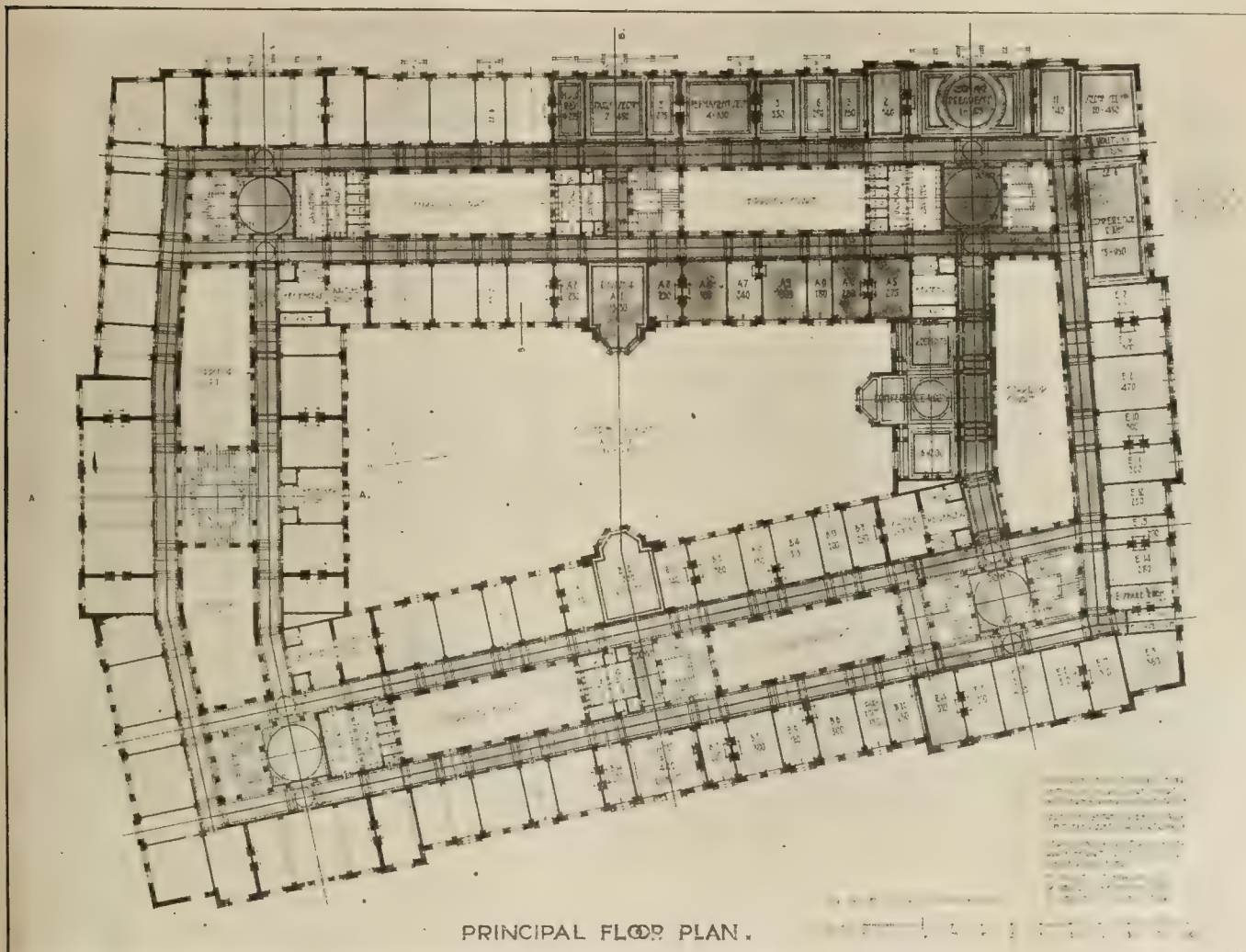
Limitations; for possession of the house is possession of the wall, which is but a part of the house. But in such a case the owner of the land can at any time before the statutory period has elapsed bring ejectment, and recover possession of such site, with the wall thereon. But when a man erects a building against his neighbour's wall, utilising it for the purpose of support and as a covering for one side of such building, he will not, by lapse of time, obtain a statutory title to the wall, for it does not form part of the building so erected, but is merely an external thereof, and cannot be considered as in his exclusive occupation or possession. But he would, after the lapse of twenty years, become entitled at least to an easement of support from his neighbour's wall for his roof and other analogous rights. A wall may be in part of its length a party-wall and in part of its length an external wall, and there is no distinction between height and length. The wall may be a party-wall up to part of its height and may be an external wall for the rest of its height.

as the principal drawings of the design prepared by Messrs. H. Percy Adams and C. H. Holden. Our available space to-day is devoted to reproductions of the interesting compositions submitted by Mr. Edwin Cooper and by Messrs. H. V. Ashley and Winton Newman. It will be noted that the lay-out of the last-named design aims at a literal compliance with what the authors understood to be the precise intention of the amended Conditions under the imperative Clause 15, and with this purpose the available space for a really big court in the centre was considerably curtailed, owing to the introduction of seven minor areas. To rightly judge between one scheme and another the exact value of such a multiplicity of interior courts has to be taken into account, as compared with the greater lighting capacity of one really big quadrangle. Such a capacious light-area is the distinguishing merit of the plan placed first. In considering this matter it is obligatory to recognise the elementary fact, that it is one thing to show windows both on plans and sections, and quite another

thing to be able to guarantee that direct light is actually insured to all such windows, which may be situate in the lower depths of wells of very restricted dimensions. Critics who differ from the umpires' award on the ground that the winner has disregarded Clause 15, which provides that corridors on the long sides of the building *must* have ample direct lighting at the sides, in addition to any end windows, evade wider issues. The preceding clause (No. 14) significantly stipulates that there are not to be more than two main courts. It is fairly argued, on the other hand, that small internal areas were not thereby precluded. Indeed, some of the

Mr. Cooper, as will be seen by his accompanying ground-plan, does insure ample direct side-light where he takes it off his big courtyards for the east and west corridors. Nothing, perhaps, could be better; but it is equally clear that his much longer corridors between the rooms of the middle connecting building, as well as in that on the north front in his ground-plan, depend almost exclusively on borrowed light, excepting where the very narrow stairways come in the middle of their length. What is complained of in Mr. Harris's top plans is thus actually adopted here on the main entrance floor. There is an absence of an infallibility of

end of the Whitehall Gardens front, and repeats on the west side a similar grand portal at its northern end, making that serve instead of providing a like central one, as required by the instructions for the north front. It is true that a minor doorway is also supplied in this plan in the middle of the Horseguards Avenue; but those who complain that the winner has located his principal entrance in the centre of the west front, contrary to the Conditions, fail to credit Mr. Harris with the secondary pair of doorways which he has put at each end of that façade. In dealing with literal misapplications of individual clauses in the Con-



BOARD OF TRADE NEW OFFICES, THAMES EMBANKMENT, LONDON, S.W.

Design by Messrs. H. V. ASHLEY and F. W. NEWMAN, F.F.R.I.B.A., Architects.

plans selected by the assessors for the final concours were essentially based upon a multiplicity of courts, so that a literal compliance all round was out of the question, and each clause becomes one of relative degree. None of the plans sent in entirely conform with what was demanded, and even the chosen design is referred to by the assessors as blemished by defects needing alterations of importance before it could be successfully carried out. In so far as small areas are concerned their efficiency, in any event, must diminish in proportion to their height and narrowness. Openings in side-walls may figure on the drawings, but no direct light could possibly reach windows much lower than the width of any wellhole. If the side courts are 20ft. wide, that dimension must, according to the sections, restrict the angle of 45deg. from reaching below the level of the seventh-floor window-sills. Of course, some light would penetrate deeper, but it could only be in a diminishing ratio, and so what appears at first sight a literal interpretation of a precise provision would become fallacious in execution. Clause 15 prescribes that the direct lighting must be "ample."

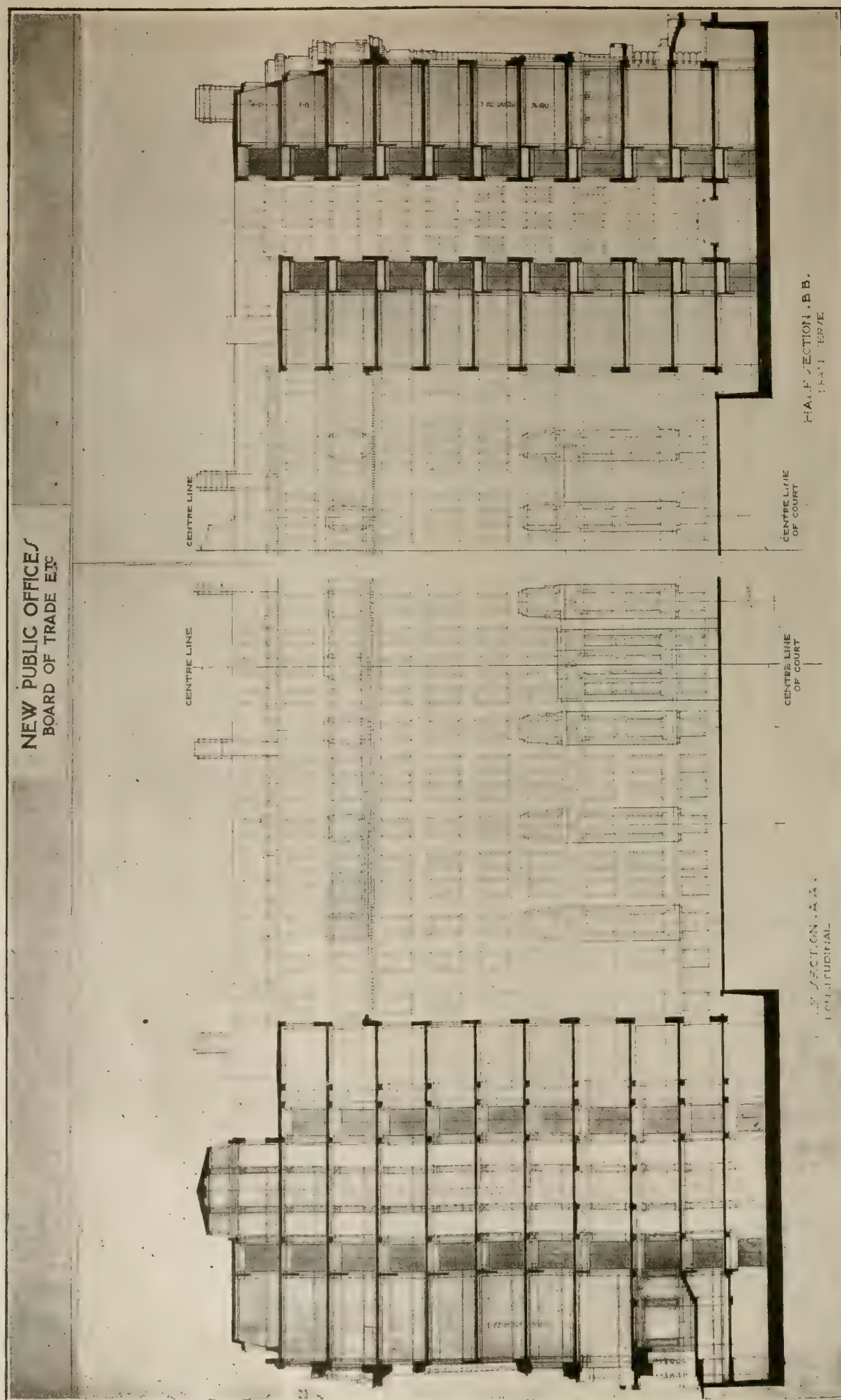
compliance in each of the ten schemes. The light insured in this and other plans may be sufficient or not; but sticklers for an absolute rendering of the Conditions overlook the ideal that was aimed at by Clause 15, which was clearly to insure all corridors being sufficiently lighted, and that is a matter of relation upon which opinions necessarily differ. We have little to add about the schemes now illustrated, unless it be to point out, for the better understanding of Mr. Cooper's carefully-worked-out plan, that he places his staircases in a similar position in the angles of the quads as in Mr. Harris's plan. The heavy colouring of Mr. Cooper's drawing, however, made his staircases come out almost as solid as the walls in the photographic reproduction; hence this note for the benefit of the reader. He has spent, no doubt, much time and skill in working out these plans, particularly in providing, as per Clause No. 12, a fireplace for every room for five or less persons. Some of the competitors entirely ignored that condition, which Mr. Cooper "strictly" complied with. He also has placed his main entrance at the south

ditions of a competition it must be remembered that such rules apply equally all round, and in confirming the justice of this award we have endeavoured to take that view, without fear or favour. As a matter of fact, neither of the designs is free from some technical objections, and, after all, it is the main result which must dominate minor incidents of that character.

ARCHITECTURAL SCULPTURE IN SPAIN.

These photographic illustrations are given in connection with our report of Mr. Andrew N. Prentice's interesting paper on "The Architectural Sculpture in Spain," and the reader is referred to what the lecturer had to say about these examples of ornate Spanish design. From Valladolid we have selected the portals of San Gregorio and San Pablo, and our third choice shows the altarpiece or retablo by Forment from Saragossa (del Pilar).

Mr. Adam Simpson, assistant borough surveyor, Kilburn, has been appointed borough surveyor and water engineer for Troon.



BOARD OF TRADE NEW PUBLIC OFFICES, THAMES EMBANKMENT, S.W.: SECTIONS.
Design by Messrs. H. V. ASHLEY and F. WINSTON NEWMAN, F.F.R.I.B.A., Architects.

Corrente Calamo.

Two of the best papers read this session at either of the principal societies will be found in our pages this week. That by Mr. Alban H. Scott at the Society, which we are enabled to give in its entirety, unhampered by the restrictions the Institute still imposes, is a timely and able summary of its subject, and we entirely endorse its author's proposed emendations of the London Building Acts, and his wish that they could be extended to the provinces. Much of the really wanton waste due to fire is almost criminal, and might be easily reduced by more stringent regulations. Mr. Andrew N. Prentice's paper at the Institute—our maimed report of which we are enabled, by his usual kindness, to supplement with illustrations—was, naturally, a most enjoyable one. No living architect knows as much about Spain as he does, or is always to be equally congratulated on the appreciation and discrimination with which he describes the work of the country. The President's concluding advice to the younger members was well timed, and if any of them propose to take it, they certainly can find nowhere else such good help as in Mr. Prentice's book on Spanish architecture.

The maintenance of a building estate as originally planned is often a troublesome matter in face of the changes wrought in localities. But it can be done, more or less, with a view to keeping up the genteel character of the property. Where a definite scheme of building is laid down and worked out, the proper plan is to surround the estate with restrictive covenants in every conveyance on sale, which are like legal barbed-wire fences bristling with the sharp points of decided authorities. Still, the reckless builder, with a bit of land on which he wants to make money, sometimes breaks through, though he may then fare worse by coming upon a hidden masked battery in the shape of a Chancery injunction. This lately occurred at Leigh-on-Sea in an instructive action before Mr. Justice Eve. There the plaintiff, as owner of the unsold parts of an estate laid out upon a definite building scheme, claimed an injunction against the defendants, who were a club company, to prevent their building club premises, with lock-up shops below, on the land they had bought. Their conveyance contained a restrictive covenant that "no house should be used as a shop." The defence was that the plaintiff had himself built some shops, and so had changed the original character of the neighbourhood. A mass of evidence was given on this point, at great length and expense. But the Judge held that no such change had been proved, and granted an injunction. So the last state of the defendants is worse than the first—unless, indeed, the Court of Appeal thinks otherwise. Meanwhile, the free use of freehold building land is rapidly becoming something of a rarity.

The Colwyn Bay Council, at its meeting on Tuesday, was informed that the Local Government Board recently addressed a letter to the council, asking what they were doing in the way of providing dwellings for the working-classes. An estate at Llandrillo has been purchased for such dwellings, and the council have prepared a scheme for the provision of a large number of houses; but

owing to the war's effect on prices and on the value of money in the market they have for the present refrained from asking for tenders for the erection of the buildings. A reply to this effect was sent to the Local Government Board. The following rejoinder from the Local Government Board was read: "There has generally been a tendency to overestimate the increase in the cost of building cottages, due to the rise in the price of certain materials, such as timber. As the cost of such materials forms only a small percentage of the total cost of a cottage, an allowance of 2½ to 5 per cent. per cottage should, in ordinary circumstances, cover any such increase. In view of the need for further houses disclosed at the inquiry, it appears to the Board that the scheme should be carried out without delay."

—Mr. E. Allen said it was absolute nonsense to say that 2½ to 5 per cent. represented the increased cost of building. It was more like 15 to 20 per cent.—Mr. J. T. Taylor declared it was 60 per cent. in some cases, and Mr. Allen observed that very absurd letters came from these public authorities sometimes. Exaggerations either way with regard to present prices of materials are not wise, nor is delay in house-building where it is wanted. There is evidently something like an organised attempt on foot to do this, as instanced by the demands for postponement by the deputation from the Rural District Councils Association, which waited on Mr. Herbert Samuel yesterday week. We shall watch for his promised reply with some interest.

Mr. Wallace E. Riche, secretary of the Roads Improvement Association, 15, Dartmouth-street, Westminster, London, writes: "The Roads Improvement Association has, through its engineers and expert advisers, exceptional opportunities of watching the behaviour of roads as affected by traffic and climatic influences. Since October last the weather conditions have been abnormal, and this, combined with the exceptionally heavy traffic which has arisen in many localities owing to the war—such as the movement of troops, guns, ammunition, and the like—will, it is feared, seriously affect the roads for some time to come. It would be interesting to ascertain how far different parts of the country have been similarly affected, and what has been the effect on the various modes of road-construction—for instance, whether the 'penetration methods' have stood better than 'mixing methods,' and how far ordinary water-bound macadam, protected by several years of tar-painting, has stood this exceptionally trying time. It would be of considerable interest if surveyors who have suffered from these weather conditions would communicate with the association, sending reports of their experiences, with notes as to exceptional rainfall, changes of temperature, and other memoranda."

The renewal on Monday, in the districts of Western and North-Western London, of the small scare of April, 1913, in regard to the "fishy" taste of the water supplied by the Metropolitan Water Board, was perhaps hardly to be wondered at, remembering all the threats of German "frightfulness." There is, of course, nothing to cause apprehension. The flavour is due to an excess of algæ in the water, caused by the rapid development of the organism on the filter-sand during heavy rains or unusual variations of temperature. The water from the filter-beds is pumped into the service reservoirs at a

higher level, and there is unavoidable delay in getting rid of the disagreeable water out of the pipes after it is detected. It is somewhat curious that a similar cause has for some time given rise to like complaints in America, and that, for some as yet unexplained cause, our water is becoming similarly affected, though in far less degree. Probably no water authority is in safer or more experienced hands than those of Dr. Houston, the bacteriologist of the Metropolitan Water Board, and we have the best reason for knowing that his vigilance has been increased as far as frequent tests are concerned since the war broke out.

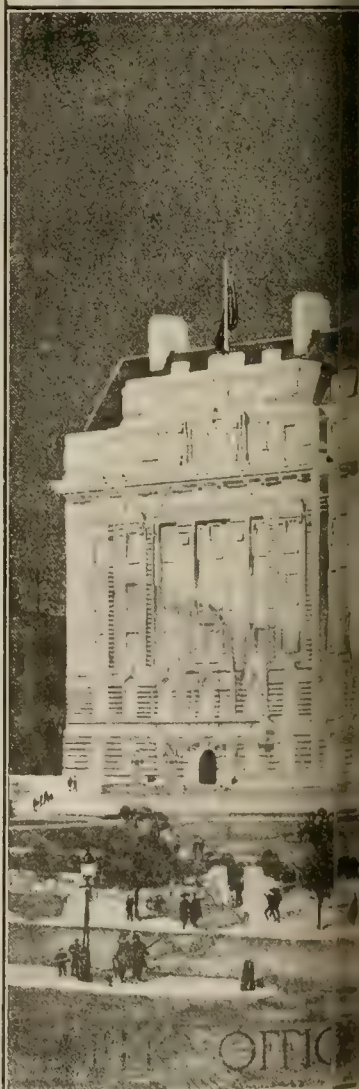
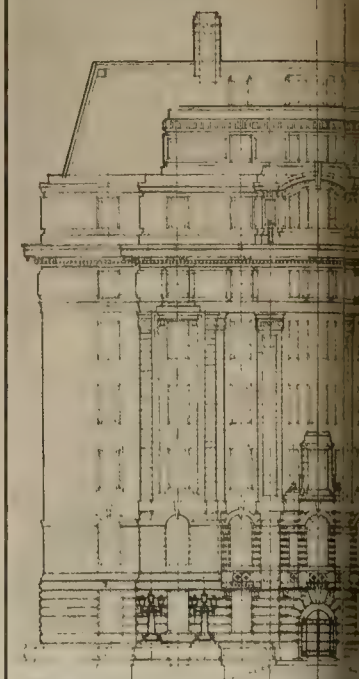
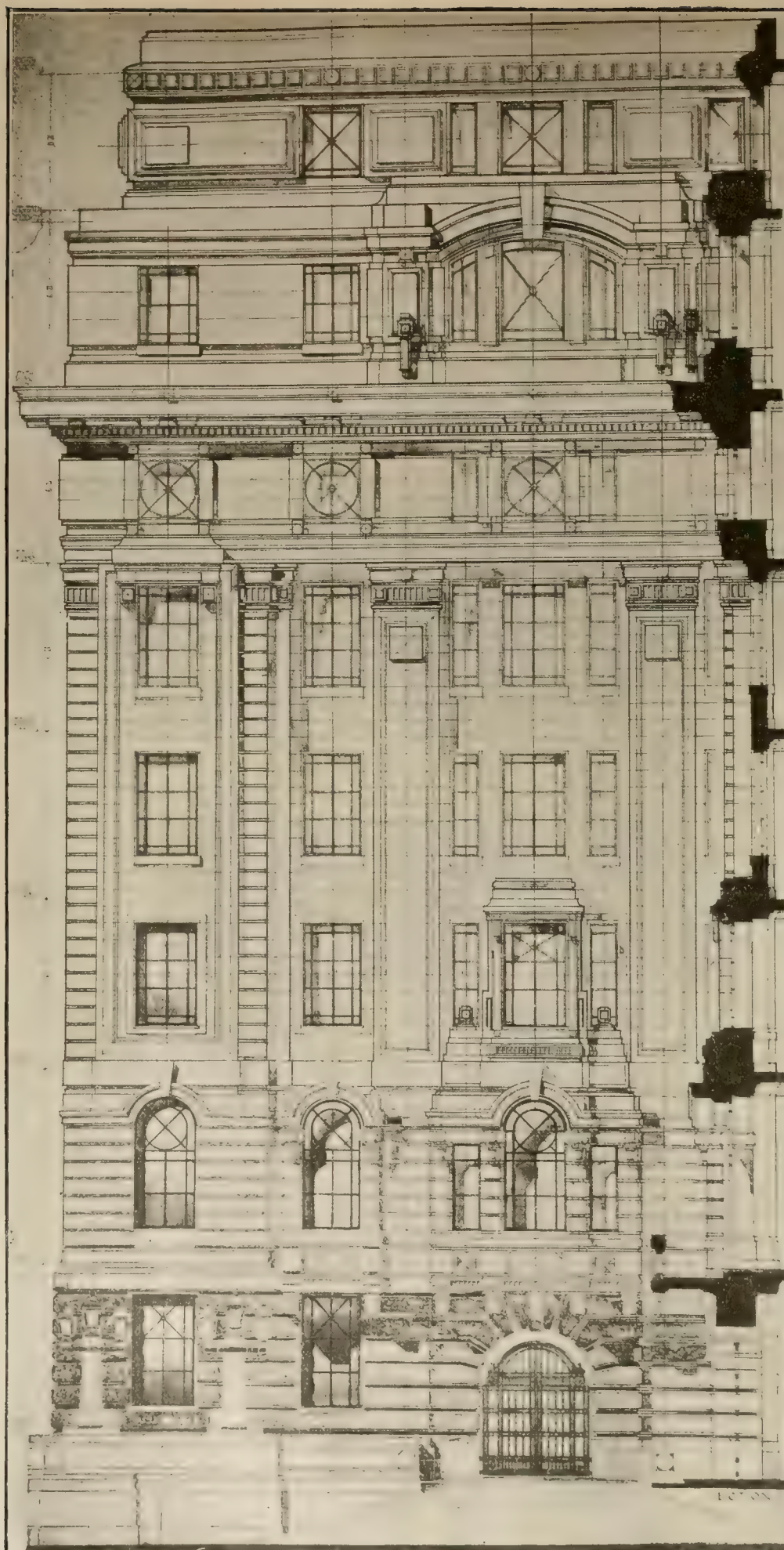
Sir Henry Craik has given notice of his intention to ask the Prime Minister on Monday whether, in any amendment of the Defence of the Realm Act, he will consider the expediency of introducing provisions which would bring within the scope of the Act any contractors supplying inferior food or equipment to his Majesty's Forces, or any persons receiving commissions in respect of such supplies. The effect of this alteration would be to make such offenders liable to trial by court-martial, with the risk, if found guilty, of being hanged or shot, and every honest man in the country will thank Sir Henry Craik for his action. Ordinary penalties seem to have no terrors for miscreants of the kind, and it is time any detected were sent to the gallows, or at least well flogged.

"The final chapter"—we suppose the New York correspondent of the *Evening Standard*, who, in last Tuesday's issue, so piquantly describes it is sure—in New England's remarkable "soul mate triangle" the love of Hartley Dennett, the Boston architect, for Mrs. Margaret Chase, with the approval and defence of her husband, Dr. H. Lincoln Chase, of Brookline—has just begun. Dr. Chase has announced to his friends that he will establish his permanent home on his farm at East Alstead, N.H., where for the past two years his wife and her "spiritual mate," Dennett, have been residing with the two Chase children. There he expects to spend the rest of his life, confessedly happy in sharing his wife's affection with the architect, his "best friend." Mrs. Dennett, it is stated, divorced her husband two years since.

A correspondent of the *Times* denounces the "high-handed methods of the Passports Department at the Foreign Office" in last Wednesday's issue. On the form sent him he described his face as "intelligent." Instead of which, some official has entered it as "oval"! The association of ideas in that official's mind seems to us an interesting subject for philosophical speculation! Is the self-attribution of intelligence egotism?

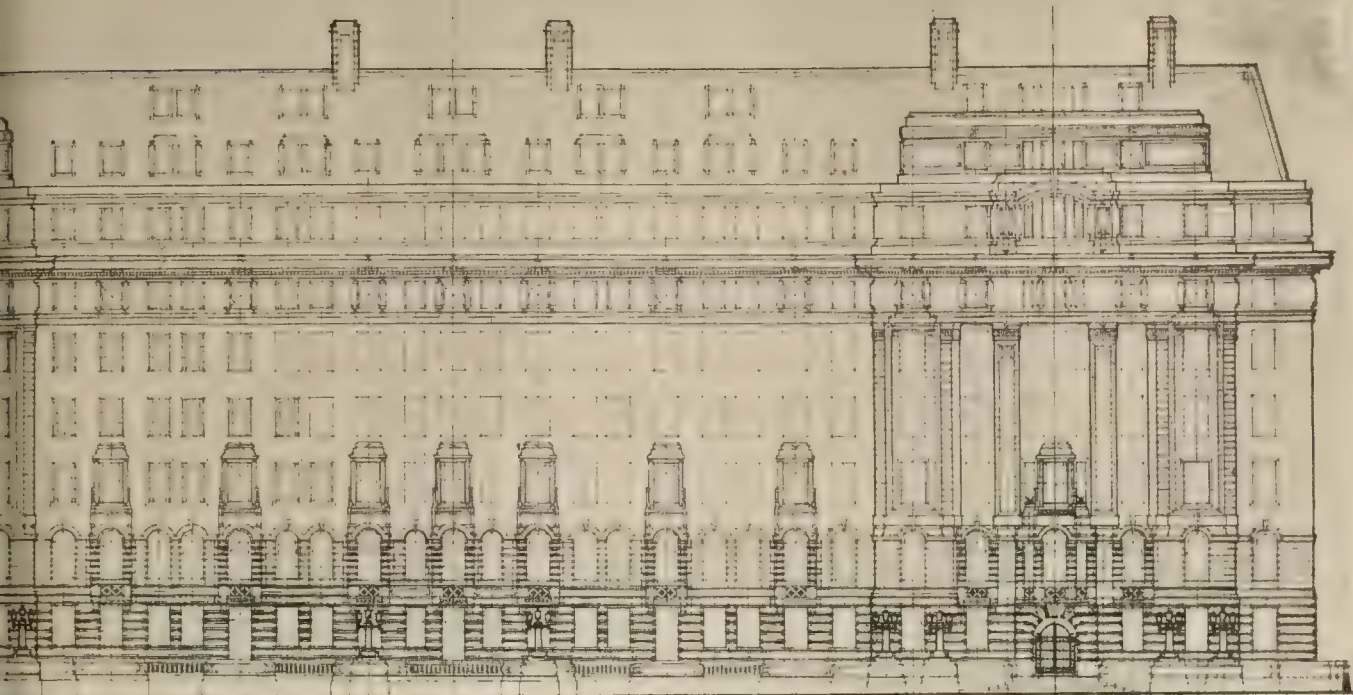
The Lutterworth Rural District Council have decided to purchase from a private company, for £3,200, the waterworks at Lutterworth.

After an extensive scheme of improvement, Corstorphine parish church hall was reopened on Friday night by Sheriff C. N. Johnston, K.C., LL.D., the Procurator of the Church of Scotland. The hall occupies the site of the house of the Provost of Corstorphine, which was built by Provost James Scott about 1640, and was taken down thirty years ago to make room for the church hall then erected. The new hall has been enlarged and improved. The cost of improvements has been £1,279, and the work has been carried out under the supervision of Mr. J. D. Cairns, A.R.I.B.A., George-street, Edinburgh.



BOARD OF TRADE NEW OFFICES, THAMES EMBANKMENT

Design by Messrs. H. V. ASHLEY and F. W. ...



FOR THE BOARD OF TRADE: VIEW OF PRINCIPAL FRONT.

S.V.: DETAIL, RIVER FRONT ELEVATION, AND VIEW.

ON NEWMAN, FF.R.I.B.A., Architects.

THE LONDON COUNTY COUNCIL.

At the meeting on Tuesday of the London County Council the Housing of the Working Classes Committee submitted a scheme for dealing with the Brady-street area in Bethnal Green under Part II. of the Housing of the Working Classes Act, 1890. The committee protested against the proposal, which is enforced upon them by an Order of the Local Government Board. The committee urge that the present is not a time for adding to the burdens of the ratepayer, nor, when there are unknown possibilities of having to raise still further capital for national defence, for capital expenditure. Further, it is not expedient in the near future to deprive a number of very poor people of their existing houses, however bad. The committee's proposal is that the area shall be dealt with by means of two successive schemes, so that the cost of the operation and the displacement of the inhabitants may be spread over a long period. The cost of the scheme for dealing with the first portion is estimated at £53,000, and the value of surplus lands and rehousing sites, assuming that accommodation will be provided for 560 persons, is put at £6,200. The Finance Committee, in a report on the scheme, acknowledged that the Local Government Board was within its rights in requiring the Council to carry out the clearance, and although they regretted the decision, they felt it was undesirable, in the existing circumstances, that the Council should enter into a controversy with the Board.

The Housing of the Working Classes Committee reported that the supply of new working-class accommodation in and round London was not at present increasing in proportion to the increase in the working-class population. Mr. P. A. Harris expressed the hope that preparation would be made for pursuing the committee's housing policy vigorously when opportunity offered. Major Levita complained that no assistance had been forthcoming from the Government in the shape of grants in aid. The chairman of the committee, Mr. Bernard Holland, said that, as far as the provision of housing for the working classes in London was concerned, private enterprise was dead.

When the tramways from Shoreditch to Stamford Hill were reconstructed for electric traction in 1906, it was decided to lay as an experiment about a mile (double line) of the tramways on the side-slot underground-conduit system, in order that a comparison might be made between this system and the standard centre-slot system, which had been adopted for the remainder of the Council's tramways constructed or reconstructed on the underground system. It has been observed that, owing to the wear of the rails forming the conduit slot, the width of the slot has increased, while, as compared with the centre slot, the renewal of the running rails which form one side of the slot has to be undertaken at an earlier date, and four times as much street rubbish accumulates in the conduit. Moreover, it has been necessary to equip cars that operate over the side-slot system with special plough-carriers. Breakdowns have been frequent at the points where the slots diverge from the side to the centre of the track, and vice-versa. The Tramways Committee reported on Tuesday that the time had arrived when centre-slot track should be substituted for this length of side-slot track. The work, which is estimated to cost £12,500, will be carried out in connection with rail renewals and spread over a period of five years.

The Building Act Committee reported upon the question of the appointment of a district surveyor for the district of Bermondsey in place of Mr. V. J. Grose. They recommend that Mr. Charles Archibald Daubney, the district surveyor for Rotherhithe, who has acted as interim district surveyor for Bermondsey since Mr. Grose's resignation, should be appointed. The gross fees received in respect of the district of Bermondsey for last year amounted to £945. This will create a vacancy in the district surveyorship for Rotherhithe.

The Asylums Committee reported that they

had purchased for £2,800 Osnaburgh House, Denmark Hill, adjoining the site on which the Maudesley Hospital is in course of erection, and that it will be adapted at a further cost of £500, for the accommodation of the hospital nursing staff, thus effecting an economy of £1,000 on the estimated outlay of £56,000 on the new building.

It was agreed to sanction the borrowing by the Poplar Borough Council of £3,228 for high-tension trunk mains and of £4,945 for feeding mains, and by the Wandsworth Borough Council of £1,980, in respect of the following street improvements—Streatham High-road and Sunnyhill-road (£573); Tooting Bec-road (£695); Streatham High-road and Hermitage-bridge (£303); and High-street and East-hill (£409).

The General Purposes Committee reported as to the effect of the working of the scheme of procedure which came into operation on October 1, 1914, so far as the acceptance of tenders is concerned. Under this procedure committees have authority to accept, on behalf of the Council, tenders which may involve very large amounts, and are not required, when reporting on the matter, to furnish the Council with any particulars as to the tenders received. As the committee conceived it to be inimical to the interests of the public service that full publicity should not be given to the amounts of tenders received for works of considerable magnitude, they invited the Special Committee on Procedure to consider the matter. That committee forwarded amendments of standing orders, which they submitted for adoption.

ROMAN RELICS IN THE CITY OF LONDON.

At the meeting of the Society of Antiquaries, held on Thursday evening at Burlington House, Mr. F. Lambert, M.A., assistant curator of the Guildhall Museum, described recent Roman discoveries in London, and more particularly the excavations on the site of the General Post Office in St. Martin's-le-Grand. He referred to some plans and drawings of Roman walls and foundations discovered in 1880-1 on the site of Leadenhall Market, hitherto undescribed, and of further foundations unearthed in 1912 at the north end of Gracechurch-street and near Half Moon-passage. From these remains he drew the deduction that the Leadenhall quarter was a centre of large public buildings in Roman London. He cautiously suggested that these fragments belonged to a basilica. Dealing next with the site of the old General Post Office in St. Martin's-le-Grand, he passed rapidly from the casual excavations under Sir Robert Smirk in 1818-25 to the preliminary diggings on the cleared site in 1913, and the organised excavation of remaining bottoms of rubbish pits undertaken at the instance of Dr. Philip Norman in 1914. Apart from those that were obviously Medieval, he thought that the dates of the pits ranged from 50 to 200 A.D., or later. By permission of the Postmaster-General, he exhibited some of the objects dug out, and checked his dates to a large extent by the potters' marks. One of the most interesting relics of Roman London found here was a gold ring, bearing the initials "Q. D. D.," and an intaglio seal, engraved with an eagle and hare. Another relic was a Jewish coin, struck in Palestine at the time of the second revolt of the Jews, 132-135 A.D. Further discoveries were the front of a mould for making medallions for pottery and the head of a statue of Venus, and a fragment of a shrine, made of pipe-clay from the South of France, of the first century A.D. He argued that that part of the City must have been densely inhabited at an early stage of the Roman occupation, as he did not believe that people living east of the Walbrook would make so long a journey just to dispose of their rubbish. Turning to the rubbish-pits found in King William-street in 1914, he found similar conditions, except that the dates seemed to range from 50 to 100 A.D. A selection of the objects found on that site, including some fine Gaulish pottery, was exhibited by per-

mission of the Corporation and the Phoenix Assurance Company, who shared the objects. In attempting a partial and conjectural reconstruction of the growth of Roman London, the lecturer indicated the areas covered respectively by the coins of Claudius and earlier rulers, by the earlier pottery of La Graufesenque, by the later pottery of La Graufesenque, by the pottery of Lezoux, and by the coins of the 3rd and 4th centuries.

A discussion followed, in which Mr. Bushe Fox, Mr. Kekewich, Dr. Philip Norman, and the president (Sir Arthur Evans) took part.

OBITUARY.

The death took place at his residence, Burleigh House, Gloucester, on Sunday, of Alderman Alfred King, who was a well-known master builder, and also one of the oldest members of the city council, and one who had been prominently identified with the municipal life of the city for many years. He was in his eighty-first year, and had been in failing health for some time. The late Mr. King went to Bushstreet Farm, North Nibley, Gloucester, when a youth to be apprenticed to the building trade, and he had lived there ever since. He was formerly in partnership with Mr. Charles Niblett, builder, and afterwards carried on business for many years on his own account, and later with his sons.

COMPETITIONS.

GARTLOCH.—At the last meeting of the Glasgow District Board of Control it was decided to obtain competitive plans for additional buildings to accommodate 300 patients at Gartloch Asylum, with attendants' houses.

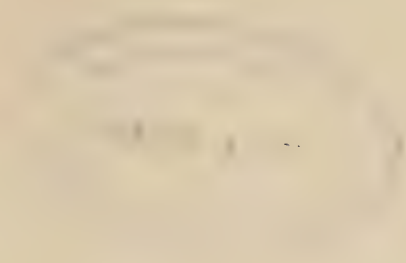
MANCHESTER.—The competition for a Masonic hall for the Province of East Lancashire has now been settled, the assessor being Mr. Walter Higginbottom, F.R.I.B.A., of Manchester. The building committee met last Friday and confirmed his award. Twenty-nine architects sent in provisional designs in the preliminary competition, and from these eight sets of plans were submitted by the selected architects from the second competition, and these designs were reduced to three for final consideration, with the result that on the opening of the envelopes it was found that the scheme placed first is the work of Mr. James B. Broadbent, A.R.I.B.A., 15, Cooper-street, Manchester. Messrs. Bramheld and Smith were awarded the second place, and Mr. T. A. Fitton, also of Manchester, placed third. The site for the new hall is situate in Bridge-street, on land formerly occupied by the Queen's Theatre. We hope to illustrate the selected design at an early date.

At a cost of about £1,000 the London County Council has been able to purchase an estate of an acre and a quarter to add to the open space of Hackney Marshes.

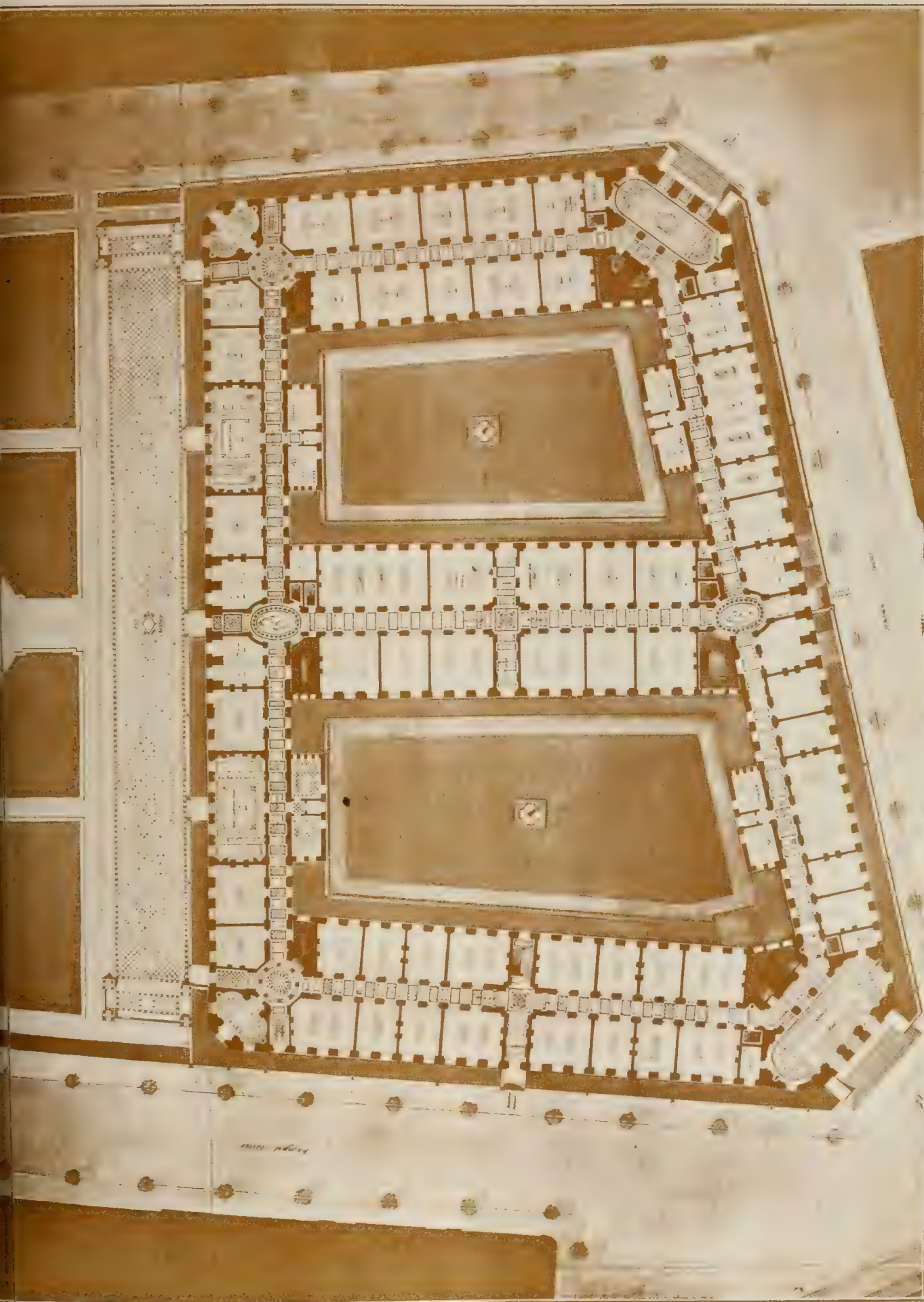
Canon Newbolt will visit the historic church of St. Giles, Cripplegate, E.C., on Thursday in next week, to dedicate the screen erected as a memorial of the late Prebendary Barff. It will replace a stone screen erected some sixty years ago at the entrance to the west tower. The screen has been designed by Mr. G. H. Fellowes Prynne, F.R.I.B.A.

The concrete roof of a long single-story building in course of construction at Messrs. J. Wrigley and Sons' Bridgehall Paper Mills, Bury, collapsed at noon on Tuesday, and buried a number of men. Six dead bodies were recovered, and five other persons were removed to the Bury Infirmary suffering from injuries. One of the injured died on the way to hospital, and another died in the afternoon, making eight deaths. The building, which was 210ft. long, 50ft. wide, and 23ft. high, formed part of an extension which has been built during the past nine months. The roof was completed about ten days ago, and it was still partly covered with sacking to protect the work from frost. The structure adjoined another large building, and on the side next to the old wall the roof was supported on arches and piers of reinforced concrete. The outer wall was of brick, built into a reinforced-concrete frame, and there was only one story. The contractors for the work were Messrs. George Greenwood and Sons, of Halifax.

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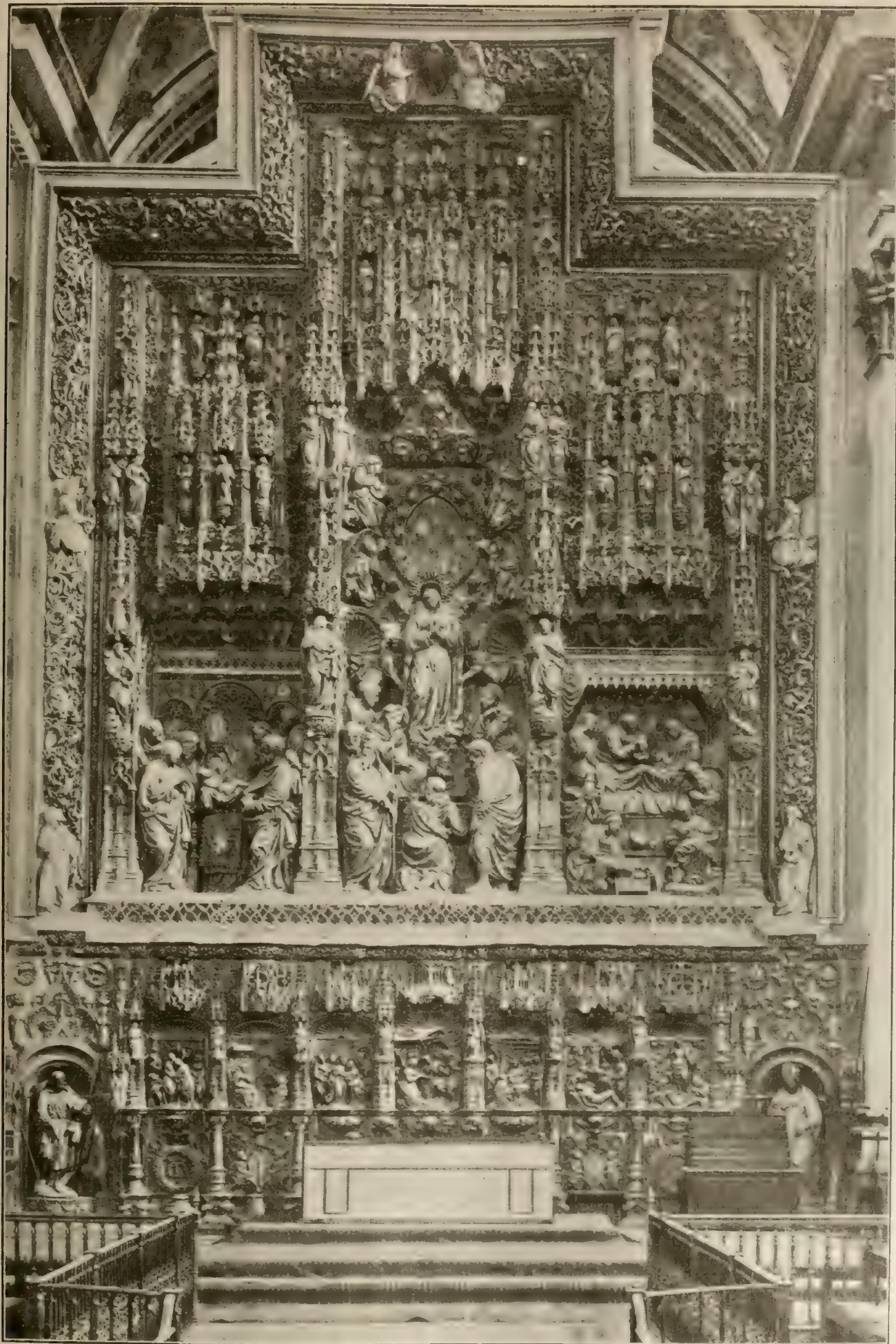






BOARD OF TRADE NEW OFFICES, THAMES EMBANKMENT, S.W.

Designed by Mr. EDWIN COOPER, F.R.I.B.A., Architect



RETABLE, SARAGOSSA (DEL PILLAR). BY FORMENT.

Illustrating Paper on Architectural Sculpture in Spain, by Mr. ANDREW N. PRENTICE, F.R.I.B.A.

THE CONSTRUCTION AND PROTECTION OF BUILDINGS IN RELATION TO FIRE.*

In giving a paper of this description, it would be impossible to do so without referring to that excellent institution, the British Fire Prevention Committee, with which two of our members—namely, Mr. Edwin O. Sachs and Mr. Ellis Marsland, have been so long associated, and have taken such an infinite amount of care and devoted so much time to its work. One case is most instructive and interesting, and that is, the testing to ascertain the relative fire resistance on ten different wooden doors. This is a very practical test, inasmuch as the designs of doors chosen are those practically in everyday use. In speaking of wood doors it should always be remembered that every piece of wood and other combustible material used for the construction or in the fitting up of a building furnishes fuel for the fire. In reading through the London Building Acts with fire precautions specially in mind, it is pleasing to note what great care has been taken generally regarding the construction of buildings from the fire point of view. In spite of all these precautions, additional provision for escape of occupants in case of fire should be provided, and the powers given to the Council still further increased in this respect. It would be advisable for the London Building Acts, and in fact all our by-laws throughout the country, to make it compulsory that all external walls and internal partitions and floors are constructed of fire-resisting material. This sounds perhaps rather a startling proposition, but does not perhaps mean quite such a drastic expense as one would think from an outline statement.

The whole of the following costs have been based on the current cost of materials:—

	Per ft. sup. Pence.
Floors.—Wooden floors suitable for domestic buildings taken in spans of 12ft.	11.3
Fire-resisting floor, ditto	17.3
Wooden floors for workshop at 200lb. super load per square foot. Spans 10ft.	29.9
Ditto, ditto. Fire-resisting floors	34.4
(Basis of last two items taken for floor 30ft by 100ft.)	
	Per yard sup. Pence.
Cost of wood framed partition, plastered on both sides, per yard super.	72.8
Cost of fire-resisting partition, plastered on both sides	72.0

Although there has been through various causes such a levelling up of prices and gradual reduction in the difference of cost between fire-resisting and combustible materials, there is one point in the construction of work where this has not occurred quite so rapidly as one would perhaps desire, namely, in the construction of windows. Wooden windows have always been very much cheaper than steel windows, and, unfortunately, there is still a big difference. (This does not refer to steel sashes suitable for factories and workshops; these are cheaper than wood.) Some special endeavour should be made to bring the cost of steel windows more to the level of wooden windows. The London Building Acts should perhaps be considered one of the wonders of the world, but there is no Act in Great Britain more courteously, fairly, and sensibly interpreted and administered. It would be a great mercy to building owners, the community generally, and to architects if the London Building Acts were in force through the country (with certain modifications), and administered by district surveyors of the same standard and training as in London. I do not propose to touch upon all the points in these Acts which relate directly or indirectly to fire prevention in its various aspects. The widths of streets and frontage lines indirectly bear upon the point, as well as courts within a building and space at rear of domestic buildings. As to the courts, I would like to see introduced that where the opposite walls of courts are less than a certain distance apart, all openings in the walls should be protected by fire-

resisting wired glass and hard metal frames and sashes.

Clause 55 (1894 Act), deals with timber in external walls, and it has always appeared to me that it would be only reasonable if the shop-fronts and frames were formed of 'incombustible material for a height up to the window glass line, but in no case less than 2ft. 6in. above the adjoining pavement. Clause 56, dealing with bresssummers, should be amended so that the stone should be capable of resisting fire and water for a specified minimum period, and also the iron columns and stanchions under bresssummers should be required to be cased in for protection. Clause 59. Might be amended so that no parapet wall need be more than 8½in. in thickness. Clause 62. Should be so amended that all floors, irrespective of height, should be constructed of fire-resisting material. Clause 64. The word "stone" should be deleted, and corbels for all chimneys should be supported on fire-resisting material other than stone or hard timber. In sub-section 6, provision should be made so that all flues are lined with fire-resisting piping of stone-ware, and the junctions of the piping should be rebated and set in fireclay mortar, and the other sub-sections amended accordingly. Clause 64. Sub-section 19 reads as follows:—"A chimney breast or shaft built with or in any party wall shall not be cut away unless the district surveyor certifies that it can be done without injuriously affecting the stability of the building." I suggest that the words "the fire risks and" be added after the word "affecting." Sub-section 22 allows wooden plugs to be "driven" within 6in. of the inside of a flue or chimney opening. This "driving" of plugs is generally executed after the parging, and many cases have been observed where such driving has opened up the mortar joint through to the flue. No wooden plug should be "driven" in in any flue or chimney where the encasing brickwork is less than 18in. thick, and the plugs should not be driven to a distance greater than 3in. into such brickwork, and all skirtings, picture rails, cornices, etc., should be formed of fire-resisting material round all flues, chimney-breasts, etc. It is a pity, I think, that clause 66, sub-section 1, does not take effect for gas-heated fittings, and the two last paragraphs of sub-section 5 should be omitted. Low-pressure hot-water pipes have often been found at a temperature of 212deg. F. Clause 68 should read that all floors and staircases, irrespective of the size or use of the building, should be constructed of fire-resisting material, and further, the top floor constructed of such strength that if the roof is not also constructed of fire-resisting material, it would successfully withstand the collapse of the roof in case of fire. Many fires have become a total loss owing to the roof or one floor collapsing and causing the whole series of floors to collapse like a pack of cards unsupported. Section 70 would appear only to take care of the question of light and air, and where a room is only lighted by a lantern light, some extra provision should be made for a second means of escape in case of fire. Clause 74. Sub-sections 2 and 3 should be amended similar to the suggestion for clause 68. Clause 80. With but slight qualifications should be made applicable to existing buildings as well as to new buildings.

IN THE LONDON BUILDING ACTS (AMENDMENT) ACT, 1905.

we have a revised list of materials to be deemed fire-resisting as follows:—

(I). For general purposes:—1. Brickwork constructed of good bricks, well burnt, hard and sound, properly bonded, and solidly put together. (a) With good mortar compounded of good lime and sharp, clean sand, hard clean broken brick, broken flint, grit, or slag, or (b) With good cement, or (c) With cement mixed with sharp clean sand, hard clean broken brick, broken flint, grit, or slag. 2. Granite and other stone suitable for building purposes by reason of its stability and durability. 3. Iron, steel, and copper. 4. Slate, tiles, brick, and terracotta when used for coverings or corbels. 5. Flagstones

when used for floors over arches, but such flagstones not to be exposed on the underside, and not supported at the ends only. 6. Concrete composed of broken brick, tile stone chippings, ballast, pumice, or coke breeze and lime cement, of calcined gypsum. 7. Any combination of concrete and steel or iron. (II.) For special purposes:—1. In the case of doors and shutters and their frames, oak, teak, jarrah, karri, or other hard timber not less than 1½in. finished thickness, the frames being bedded solid to the walls or partitions. 2. In the case of staircases and landings, oak, teak, jarrah, karri, and other hard timber; the treads, strings, risers, and bearers being not less than 1½in. finished thickness, and the ceilings and soffits, if any, being of plaster or cement. 3. Oak, teak, jarrah, karri, and other hard timber when used for beams, posts, or in combination with iron, the timber and the iron (if any), being protected by plastering or other incombustible or non-conducting external coating not less than 2in. in thickness, or in the case of timber not less than 1in. in thickness on iron lathing. 4. (a) In the case of floors and roofs. Brick, tile, terracotta, or concrete composed as described in paragraph I. (6) of this schedule, not less than 5in. thick in combination with iron or steel; (b) In the case of floors and of the roofs of projecting shops. Pugging of concrete composed as described in the said paragraph I. (6), not less than 5in. thick between wood joists, provided a fillet 1in. square is secured to the sides of the joists, and placed so as to be in a central position in the depth of the concrete, or concrete blocks not less than 5in. thick, laid between wood joists, on fire-resisting bearers secured to the sides of joists. 5. In the case of verandahs, balustrades, and outside landings, the treads, strings, and risers of outside stairs, outside steps, porticoes, and porches, oak, teak, jarrah, and karri, or other hard timber, not less than 1½in. finished thickness. 6. In the case of internal partitions, enclosing staircases and passages, terracotta brickwork, concrete, or other incombustible material not less than 3in. thick. 7. In the case of glazing for windows, doors, borrowed lights, lantern, or skylights, glass not less than ½in. in thickness, in direct combination with metal, the melting-point of which is not lower than 1,800deg. F., in squares not exceeding 16sq.in., and in panels not exceeding 2ft. across either way, the panels to be secured with fire-resisting material in fire-resisting frames of hard wood, not less than 1½in. finished thickness, or of iron.

(III.) Any other material from time to time approved by the Council as fire-resisting. In section 1, sub-section 2 of this list, we have "stone suitable for building by reason of its solidity and durability." Certain stone which meets the requirements of this clause is quite unsuitable for fire-resistance, and might come under the heading of incombustible material, but not fire-resisting. Slates under clause 1, sub-section 4, should be omitted for corbels. Slates will not successfully stand heat and water. In clause I, sub-section 6. Concrete formed of coke breeze is permitted, but should be prohibited where it would come in contact with steel, and should not be taken as applicable to I. 7. In II. 3. Plaster protection is allowed to be 1in. in thickness on timber in lieu of 2in., if metal lathing is used. From certain fires it would appear that the metal lathing was of very little help in retarding fire. In II. 4 (a). Concrete requires to be not less than 5in. in thickness. This I suggest for roofs could be safely reduced to 3½in. and to 4in. for floors. In II. 4 (b). Pugging, which is generally very indifferently executed, should be omitted from fire-resisting materials. Clause 7 of the 1905 Amendment Act I should like to see amended to read that the Council is to be satisfied as to means of escape in case of fire to all buildings, irrespective of whether they are "high buildings" (that is, upper story of greater height than 50ft.), or providing sleeping or working accommodation for more than twenty people. (In the case of workshops employing 20 or less, I believe one of the Government depart-

* By A. ALBAN H. SCOTT, Vice-President. A paper read before the Society of Architects, Feb. 11, 1915.

STANDARD 1B.

STANDARD 2.

STANDARD 3.

As to fire-resisting construction, they have various standards, such as standard 1b, 2, 3. The standard 1b deals with cotton, flax, woolen and worsted mills.

The standard 1b requires that buildings be not more than 80ft. in height, and cubic contents of any one compartment not to exceed 60,000c.ft.

Walls to be of brick, terracotta, or concrete, and not less than 13in. thick; but if plain concrete, not less than 20in.

Partitions to be of incombustible material, excepting only office enclosures, which are to be of hard non-resinous wood.

All doors to have brickwork not less than 9in. thick towards the interior, and no woodwork to rest in or be plugged into the brickwork of any floor.

Openings in external walls not to exceed half the area of any story.

All window frames and sashes to be of iron or other hard metal, and all windows above ground floor to be glazed with glass not less than 3in. thick in sections not larger than 2ft. super., and all openings above the ground floor opposite, and within 20ft. of any window or other glazed opening, and within 20ft. of any roof, to be protected by "fireproof" shutters or doors.

Floors to be brick arches, terracotta, fireclay, or concrete not less than 6in. thick.

Wooden flooring permitted if laid close to floor with no space.

Solid wood floors, not less than 9in. thick, if ceiled with plaster and covered with floor boards (no space), are also allowed, provided waterproof lining is provided underneath the floor boards.

Scuppers to carry off water to be provided of 21sq.in. every 12ft. apart on each floor (buildings in C. of L. or L.C.C. scuppers not essential).

Roofs to be entirely of incombustible materials as for floors, but not less than 4in. thick.

Glass not less than 3in. thick, in sections not exceeding 36sq.in., set in hard metal, and wired glass, and electro-copper glazing, considered as incombustible.

Structural Metalwork.—All columns and stanchions to be covered with brickwork or porous terracotta 2in. thick, or concrete or plaster 13in. thick, keyed into metal supports, and protected for a height of 4ft. from floor where cement concrete or plaster only used.

All other metal work, including roof-work, to be encased in porous terracotta 2in. thick, securely anchored, or cement concrete or plaster 1in. thick, keyed into metal supports. Provision to be made in all cases for expansion.

ROOFS AND CEILINGS.

No lining of wood or textile fabric allowed to any part of walls, partitions, ceilings, or roof.

FLOOR OPENINGS.

Only holes for driving shafts, iron or earthenware tubes for electric conductors, and these to be specially dealt with.

Staircases practically as required for emergency exits by L.C.C. Where staircases and hoists extend to top floor, enclosure must be roofed with glass roof protected (subject to certain restrictions in L.C.C. area).

All belting and rope races to be enclosed as for staircases and hoists.

Shafting through walls to fit closely into wall, and to have closed wall boxes, leaving no open space.

Pipes, &c.—No wooden casing allowed. All pipes (except water pipes not exceeding 13in. diameter) to be of hard metal.

COMMUNICATING COMPARTMENTS.

Two or more compartments (constructed according to the rules) may communicate, provided their aggregate cubical contents do not exceed 60,000c.ft. When cubic contents exceed 60,000c.ft., communication only allowed across a fireproof compartment, built up from the basement with walls of solid brickwork, and having all openings protected by fireproof doors at least 6ft. apart.

REINFORCED CONCRETE.

Reinforced concrete buildings allowed subject to the usual precautions.

The requirements as to proportion of cement in concrete are somewhat ambiguous—viz.,

"In the proportion of 6cwt. of cement to each cubic yard of concrete."

All external walls to be not less than 6in. thick.

Division walls 8in. thick.

Party-walls 13in. thick, except if adjoining reinforced concrete building, then 8in. thick.

Floors 4in. thick if lined with fire tiles 13in. thick.

Floors 5in. thick, and supported on beams and columns of reinforced concrete.

Roofs 3in. thick.

No metal to be nearer face than double its diameter, but not less than 1in., and need not exceed 2in.

Enclosures and staircase and hoists 6in. thick.

Fire-resisting compartments to have walls 9in. and floors 5in. thick.

Ditto, but not less than 13in. thick.

Ditto, but partitions of metal lathing and plaster on wood frame allowed.

Ditto, but if rendered with 1in. cement brickwork may be 3in.

Ditto.

Ditto, but in lieu of "fireproof" shutters, wired glass may be used, subject to certain conditions.

Ditto.

Ditto.

Ditto.

Roofs to be entirely of incombustible material, glass allowed in roof if not less than 3in. thick, not exceeding 5ft. super., or wired glass or electro-copper glazing, in each case set in hard metal outlets to meet requirements of Factory and Workshop Acts allowed subject to certain conditions.

All columns, stanchions, girders, joists, lintels, and other metal-work (excluding framework of roofs) to be cased 2in. thick, or with 1in. concrete or plaster, as Standard 1b.

Ditto, except dado allowed in wood not exceeding 6ft. high in offices, cellars, staircases, and passages provided not used for storage.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto, but not less than 9in. thick.

Ditto, but 3in. thick.

Ditto.

Ditto, but 6in. thick, and all supports and stanchions and other structural metal-work covered with plaster or concrete, &c., 3in. thick.

Having no combustible material in its construction. Flat roofs of similar construction to solid wood floors, but 4in. thick. No floor boards, but on upper side covered with metal, concrete, asphalt, or a composition of asbestos and other incombustible mineral ingredients, or vulcanite having a coating of at least 2in. of sand or gravel. See previous note.

Ditto.

Hoists to be enclosed in walls 6in. concrete, or R.C. 3in. thick, with fire-resisting doors. Sprouts or trunks not exceeding 4in. square feet in area, constructed of iron 1/4in. thick, and shutters to every opening.

Openings up to 12sq.ft., with double iron or metal covered trap doors (special construction).

Staircases having steps and landings of brick, stone, iron, concrete enclosed with walls, this applying also to vent shafts, all openings being protected.

Ditto.

Ditto.

Ditto.

Between piers 5in. ditto.

Ditto, but 3in. thick.

Ditto.

Ditto.

Ditto.

Ditto.

Ditto.

ments look after.) Dealing with this clause, I have always failed to see why the building public should be put to the inconvenience and extra expense of having to wait an additional period of one month for approval during the period the Council are pleased to take as their vacation. It would be a proper and more convenient arrangement if the matter could be settled by a small committee during the vacation. Sub-section 2 of clause 7 (and other sections and sub-sections affected) should apply to all buildings, and not only to "high buildings." Sub-section 4 should be altered so that every story of every building, irrespective of its use or height, should be provided with approved means of escape in case of fire. Section 8, sub-section 1, dealing with existing buildings, should also be altered as suggested for section 8, sub-section 4. Sub-section 4 of section 9 should also be amended as suggested for section 8, sub-section 4. Section 10 should be altered to apply to all projections, irrespective of the distance of such projection. The thickness of such roof of fire-resisting material should be reduced, as previously suggested. Section 10, sub-section 2, should be altered so that any skylight or lantern light in projecting shop roofs be formed of fire-resisting material, and glazed with wire-wove glass properly and securely fixed. The buildings belonging to various companies and corporations which are properly and usually exempt from the Building Acts, should not be exempt from the Acts referring to fire precautions and fire exits. Clause 34 is somewhat startling, as I have yet to learn that banks and insurance companies are more careful than other companies. Past results have not indicated they are, and one can hardly conceive that their employees' lives are of less value. It might be of interest to slightly touch on the insurance companies' requirements.

Under Standard IV., the party and external walls to be not less than 9in. thick of brickwork, etc., and no combustible material to enter into any part of construction except the roofing, doors, and window frames. External walls of reinforced concrete 5in. thick. Hoists enclosure to be of incombustible construction. Staircases may have steps and landings of hard wood. The insurance companies' regulations as to fireproof doors and shutters are many and various; they deal with iron and steel (sliding and hinged). Metal-covered doors (ditto). "Check fire" doors (ditto). Ferro-concrete doors, etc. The openings must not exceed 56ft. super., and not more than 7ft. in width, or 9ft. in height. In some cases not to exceed 45ft. super., and not more than 6ft. in width, or 8ft. in height. In other cases 35ft. super., and not more than 5ft. in width, or 7ft. in height. These rules generally are very careful as to fixing, and little details all of the greatest importance. The use of cast-iron for door parts or fittings is not allowed. Each door must have a metal plate attached giving the date of its erection, and in some cases the name of the maker. The fixing and method of securing fireproof doors and shutters is of the utmost importance. The proper maintenance of this work should receive greater care than is usual. Within the last 14 days I was asked how long a "fireproof" shutter would last; my report was five minutes. They were somewhat surprised to find that a loose wooden separating slip 6in. wide had been inserted in lieu of a properly secured double rebated steel stanchion. Many risks would be avoided, and much loss saved if all buildings were inspected and reported on every six or twelve months. Unfortunately, most people rely upon the insurance companies' inspections, which is not fair to any of the parties interested, particularly from the employees' point of view. All the particulars given above as to insurance companies' requirements are, of course, subject to other rules as to special work, artificial lighting, etc. There are many considerations to take into account when settling what form of construction to adopt (the local authorities make requirements as to exit for employees, and the insurance companies more particularly as to fire risk; but generally the better the

insurance risk so is there less risk to employees). One immediate point is the comparative first cost, but this should be considered in relation to the reduction in insurance premium, and also the possible inconvenience to the works, and the loss of profit and loss of business connection. It is only the owner who can determine the value of the latter points. The insurance company determine the question of premiums. It is interesting to note that premiums can, under certain circumstances, be reduced as much as 60 per cent. This, where large and valuable stocks are kept, may be of great importance.

PRECAUTIONS FOR EXTINGUISHING FIRES.

This leads on to the question of precautions for extinguishing fires, and big reductions in premiums are possible if care is taken as to these precautions, ranging from 5 to 40 per cent. For fire-extinguishing we have, speaking broadly, the following:—Chemicals (dry and liquid). Water (high and low pressures). Steam. Sand. And in addition various methods of smothering with sheets or blankets formed of various materials. There are comparatively few large chemical machines, but generally these appliances take the form of small portable extincteurs, and, no doubt, in very many cases they have proved exceedingly useful, and saved big loss. There are a very large number of these on shelves ready to be used in case of emergency; it would, however, be interesting to know the percentage of these that would be properly used, and undoubtedly their efficiency is greatly reduced owing to the lack of knowledge of proper use. Fortunately, the insurance companies have now standard requirements as to the manufacture of portable chemical extincteurs, including that they shall be stamped with maker's name, year of manufacture, capacity, and must bear a declaration that they have been tested to 350lb. per square inch.

WATER.

In spite of all scientific progress, water still maintains the premier position. Science has, however, helped us to apply it in many ways. Buckets. Hand pumps. Hydrants (private and public), with ordinary and high pressure. Sprinklers. Drenchers, etc. Buckets, if judiciously placed and kept in their proper place with water in them, are very valuable. If the buckets are provided and left to take care of themselves, they may prove highly dangerous, as delay may cause loss of life and heavy loss of stock. Even where certain people are put specially in charge of fire equipment, most constant and careful supervision is required. If buckets are provided, convenient draw-off taps for fresh supplies should be provided, and where rounded bases are provided to the pails, each draw-off tap should have a hook to hang the pail on during filling. Rounded bases have many disadvantages, and one advantage—viz., that they are not so readily taken down and used for other purposes. Buckets of not less than two gallons capacity, and three buckets to every 250ft. super. should be provided, for which 5 per cent. on the reduction of premium is obtained. Small portable hand-pumps with water container are exceedingly useful, and should be provided more frequently.

HYDRANTS.

The degree of usefulness of private hydrants depends greatly upon the pressure in the mains. Generally speaking, the pressure is very low, varying from 20lb. upwards. With 40lb. pressure, good and useful work can be executed in skilled hands. In laying down a hydrant installation connection to two different mains should be made, if possible, but this is rendered still more valuable if such mains are fed from different sources. Where such double connection is made, back-pressure valves are required. Pressure gauges should be put to each end of the hydrant mains. These should be frequently examined. It is also absolutely essential that the hydrant stands should also be periodically examined—that is, examined fully, hose connected, turned on, and so kept in such a condition that immediate use can

be obtained. Hydrants are useless without a proper and properly kept equipment of hose, branch pipes, etc. The hose should be regularly used, carefully dried and attended to. In most buildings, or set of buildings, it would be found most convenient to have a certain length of hose attached to each hydrant, with the swing cradle, with branch pipe attached. A general store, as central and as free as possible from fire risks, should contain additional hose and other equipment, including hatchets, hammers, crowbars, and the usual fittings. In works where there are several or many separate buildings, a detached central fire station is of most vital importance; this, of course, should be followed with the training of a certain number of the staff, and in this connection, if I may for a moment still further digress from hydrants, proper fire-drill should be held throughout the works. Each selected man, apart from firemen, should have a place assigned to him in case of fire alarm, and it should be their duty to see that every employee is properly looked after. To avoid crush, or panic, every person should know their assigned exit in case of fire, and these alarms should be given at least once a week. There is one essential point, however, that must be rigidly enforced—viz., upon the fire alarm ringing, any employees who do not at once leave their work and proceed quietly and orderly to their assigned exit must be immediately dismissed. If this rule is not made and most rigidly enforced, fire drills may become a danger in lieu of a help. One other important point is that the necessary number of men should be put on point duty to switch off all fans, motors, gas, and similar appliances. To come back to hydrants, the pressure on the private mains should, where possible, be fitted with an automatic pump to increase the pressure. This not only increases the height to which water can be thrown, but the quantity of water discharged in a given time is also increased with very high pressure. Special apparatus is required to hold the branch pipes. This increase of pressure has the further advantage of enabling a greater number of connections being taken from one hydrant; it is a great mistake to overload any hydrant or main; it is better to have a fewer number of efficient jets rather than a greater number of indifferent jets.

SPRINKLERS.

The insurance companies rebate on premiums where sprinklers are installed varies according to standard of installation and other circumstances. The rebates, however, are in themselves an automatic testimonial for their efficiency, varying from 30 per cent. to 70 per cent. of the premium. The arrangement in general is that every part of the floor area is covered by the action of sprinklers. According to the standard required, the water supplies are connected to:—1. Town main. 2. Elevated tank. 3. Pressure tank. 4. Pump. 5. Injector apparatus. 6. Elevated private reservoir. The requirements varying according to standard aimed at. To repeat the various requirements in detail would be too lengthy, and I am sure somewhat dry for you, although the matter deals with water. Two systems are in use. One, the dry system—that is, the pipes throughout are not charged with water, but immediately a sprinkler goes off the water rushes through. The other system is where the whole system is constantly charged with water, and consequently immediately a sprinkler goes off, the water comes into action. The sprinkler heads are arranged to open at any temperature, but generally arranged for 155deg. F.; where, however, the requirements of the business demand, a higher temperature is fixed. These heads have metal fasteners which fuse at the given temperature, and immediately give access for the water to discharge, this discharge being in the form of a cone, generally striking on the ceiling first and discharging in the form of a fire-curtain of water thoroughly drenching everything within its area, and at the same time owing to its fine spray practically acting as an oxygen excluder to the enclosed area, this being, per-

haps, just as important a function as the actual water. From tests I have seen actually carried out, I would definitely state that there is no fire risk (apart from the damage caused by explosion), where sprinklers would not save the building, even if formed of wood.

DRENCHERS.

Fittings known as "Drenchers" act in a similar way to sprinklers, but are generally placed just over the outside of the windows to prevent the fire spreading from one building to another. If a little care and attention is given to the designing of a building with the idea of sprinklers being installed, the actual construction need not be less economical, and if the building is so designed considerable cost can be saved in the installation of sprinklers, as the rules demand that sprinklers shall be placed, generally speaking, about 10ft. centres; but this is subject to the depth of beams and for other similar obstructions on the ceilings. All spaces, such as voids in roofs, must also be provided with sprinklers, and with regard to the pressure of water required or desirable it should be remembered that all pressure is measured as running pressure. In addition to the normal pressure obtained by the head of water, increased pressure can be obtained by installing automatic pumps. To all sprinkler installations pressure-gauges must be fixed, together with a rather complicated system of valves, which, however, are not complicated in working. Every installation must be fitted with approved automatic alarm-signal, which gives notice immediately any sprinkler is opened, and this alarm remains ringing as long as any sprinkler is in operation.

STEAM.

The use of steam for extinguishing fire could—and would, no doubt—be used to a greater extent if it were not that serious danger were attached to its use. It also has this serious disadvantage that whereas water-sprinklers can safely act automatically, serious accidents might result from steam being applied automatically in case of fire. Even if a steam installation is put in it must be only under the charge of one man, and some considerable delay must ensue before he turns the valve on, as it would be absolutely imperative for him to make sure that every part of the building was clear of employees. I question, therefore, if such an installation would be allowed by the authorities.

SAND.

Sand, if used at the very early stages of the fire, is exceedingly efficient; but its method of application—namely, by pails or similar means of throwing—curtails its action very considerably, as there are no means of applying it from a distance with any degree of accuracy, and it would, of course, lack a constant supply of application, but certainly a proportion of fire buckets should contain sand in lieu of water.

AUTOMATIC FIRE-ALARM INSTALLATIONS.

Automatic fire-alarm installations, apart from the automatic alarm attached to sprinklers, have progressed very considerably, and can be so arranged that they not only give fire alarms to the users of the premises, but are kept directly connected to a public fire-station. These are generally installed upon the principle of thermostats, working with a variation of temperature, the whole being led to an annunciator, which will immediately indicate where the fire has taken place. The insurance companies lay down very careful rules with regard to installations, and deal also with electrical work, testing, and maintenance.

In conclusion, I would suggest that this Society take into very serious consideration the means of escape that should be provided for hospitals, infirmaries, and similar institutions where many of the inmates are unable to help themselves in case of fire. All such buildings should be fitted with sprinkler installations, and, further, fire resisting sloping ways with proper wheel tracks should be provided to each floor, the usual exit doors with panic bolts provided and the beds fitted with casters at least 4in diameter for easy manipulation.

Building Intelligence.

CHEADLE.—The opening of new court-house and station for the Petty Sessional Division of Cheadle took place last week. The courthouse is a new building, and has been erected on the site of some cottages and stables. The court itself is 50ft. by 20ft.; the furnishing is in dark oak. There is a separate entrance to the court without passing through the main building. In addition, there are a magistrates' room, motor-car accommodation, and a drill-yard for the police. The cost of the building is £3,000. The contractor was Mr. Thomas Godwin, builder, Hanley, and the plans were prepared by Mr. J. Nevett, county architect for Staffordshire.

PROFESSIONAL AND TRADE SOCIETIES.

EGYPTIAN EXPLORATION FUND.—A lecture on the work of the fund during the last twenty years was given by Mr. H. R. Hall before the subscribers to the fund at the Theatre of the Royal Society, Burlington House, on Tuesday. Mr. Hall called attention to the importance of the discoveries in throwing light on the earliest forms of Egyptian art. A priceless find had been the unique sarcophagus of a priestess, with graphic carving that comprised her portrait, and those of attendants, characteristically employed. The war had checked the progress of the work of clearing a wonderful subterranean building discovered by Miss Murray, who had been assisting Professor Petrie in the work. Some thought the building was as old as the Temple of the Sphinx. There was a sanctuary with a central platform surrounded by a canal for small boats. These were probably used in a religious ceremony, but the real purpose was unknown, and a most interesting enigma was presented.

FACULTY OF SURVEYORS OF SCOTLAND.—The second annual meeting of the West District Section of the Faculty of Surveyors of Scotland was held in the Christian Institute, Glasgow, on Thursday in last week. Mr. Howatt, chairman, presided over a large attendance of members. Mr. Howatt, on demitting office as chairman of the west district section, received a cordial vote of thanks for the services he had rendered to the faculty during his two years of office. The following office-bearers for session 1915 were elected:—Chairman, Mr. John Baxter, 243, St. Vincent-street, Glasgow, who also becomes ex-officio vice-president of the faculty; secretary and treasurer, Mr. William Johnstone, 150, St. Vincent-street, Glasgow.—Mr. Alan K. Smith occupied the chair at the annual general meeting of Fellows of the East District Section of the Faculty of Surveyors of Scotland, which was held at 117, George-street, Edinburgh, on Friday. The annual report showed an increase of 13 in the number of members on the roll compared with the preceding year. During the year the council had been principally engaged, in conjunction with the west district section of the faculty, the architectural societies, and the Scottish National Building Trades Federation, in adjusting a national mode of measurement for carpenter and joiner work. The funds at December 31, 1914, amounted to £250 2s. 10d. The chairman, in moving the adoption of the report and accounts, stated that a considerable number of Fellows, assistants, and apprentices were engaged with H.M. Forces, and that a complete list was being compiled. The report and accounts were adopted. Messrs. Robert Jerdan, F.F.S., Edinburgh, and William Gaudie, F.F.S., Dundee, were appointed new members of council.

HISTORIC WHITBY.—Under the auspices of the Castle-gate Literary Society, Mr. Harry Gill, M.S.A., president of the Nottingham and Derby Architectural Society, lectured on Tuesday night, at the Castle-gate Hall, Nottingham, on "Whitby and its History." The lecture was illustrated by a series of excellent photographs

taken by Mr. Gill, perhaps the most interesting being those which showed the effects of the recent bombardment on the abbey and town. The picturesque old houses, built in flats, and countless interesting architectural features were effectively screened. The quaint yards and the elegant town hall made delightful views, and the fine old church on the hill, with its "two centuries of steps," was another feature. Curious inscriptions on tombstones and associations with local celebrities were also narrated by Mr. Gill.

THE ROYAL TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMEN'S SOCIETY, GLASGOW.—At a meeting on the 12th inst., Mr. J. Boyd Lee, R.I.B.A., chief assistant and lecturer in the architectural department of the college, gave a paper on "Stereotomy." At the outset the lecturer defined stereotomy as being the science of stonecutting. By numerous blackboard sketches, diagrams, and slides Mr. Boyd Lee described the drawing down and mould-cutting of several examples of scientific masonry, which included Gothic and groined vaulting, domes, arches of double curvature, skew bridge, niches, ramp, and twist work, etc.; also by the same means the lecturer described the various operations involved in the stone-cutting in each case. In concluding, he urged all members of the architectural profession and of the masonry craft to uphold the dignity of their calling by applying themselves to the study of the scientific side of masonry, and he also suggested means whereby the student could obtain this object.

SHEFFIELD.—Before the Sheffield Society of Architects and Surveyors, Mr. W. S. Purchon, A.R.I.B.A., lectured on Feb. 10 on "Architecture and Environment." Lantern views of many famous buildings adding largely to the enjoyment. There was an excellent attendance. Mr. Purchon, in his effort to stimulate interest in a new "atmosphere" in architecture as indicated in the subject of his lecture, referred to the great architectural glories of Rome, Greece, and Egypt, thence passing on to detailed and very interesting references to the Romanesque and Gothic eras in Western Europe, and to the spread of the Renaissance in England and France. He explained that he wished the character of past ages to be extended to-day, and that his remarks had been influenced by a desire for education. No architect was ever called upon to prepare a building which possessed no environment, and he sought to blend the environment with the building, so that a harmonious whole might result.

TOWN-PLANNING AND CIVIC DESIGN.—Continuing his course of lectures at the Birmingham University on "Town-Planning and Civic Design," Mr. Barry Parker, F.R.I.B.A., demonstrated in his address given on Friday the interdependence of the house plan upon the plan for the layout of the ground, and the plan for the layout upon the type of house plan proposed to be used. He pointed out that by carefully planning each house so as to make the fullest use of the advantages the site offered, architects could do a great deal to advance the art of house-planning. He referred to the advantages of the terrace house over the detached house in districts where the frontage was necessarily limited, and added that the detached house in the suburbs had always been one of the most difficult things the town-planner had to deal with in his endeavours to get some sense of unity and quiet dignity in such districts.

Mr. James Wallace, who had been surveyor to Panteg Urban District Council for twenty years, and was previously surveyor to Llansfrecfa Upper Urban District Council, died at Griffithstown on Wednesday in last week.

At the last sitting of Coatbridge Dean of Guild Court the United Y.M.C.A. was granted lining for the erection of an institute in Bank-street at an estimated cost of £3,500. The building will be a three-story one. On the ground floor there will be two shops, a hall to accommodate 500 and a gymnasium, and on the upper floor a small hall and recreation rooms.

Correspondence.

UNHEALTHY SCHOOLS.

To the Editor of the BUILDING NEWS.

SIR,—The statements in favour of cross-ventilation in schools have been the result of careful study of practical demonstrations. It is impossible to appreciate—without a visit—the high efficiency which has been obtained in recognised and regulated cross-ventilated schools. With reference to "Caloric's" final paragraph, the architects and medical officers of the Staffordshire and Derbyshire Education Committees are well-known advocates of cross-ventilated schools.

These authorities (the writer has taken the liberty of publishing them in the controversy) can and will be pleased to give "Caloric" a practical and scientific explanation of the principles involved, and also prove that cross-ventilated schools are better than those ventilated by mechanical means.

The ventilation of tram-cars is very interesting, but it does not bear on this subject in any way.—I am, etc.,

D. WYNNE THOMAS.

"Glenthorne," Nunthorpe, Yorks, Feb. 15.

SIR,—"An Old B.N.D.C. Boy" is pleased to be facetious, but I don't blame him—far from it. As my old friend Robert Louis Stevenson said in one of his happy moments, "A little judicious levity is a very excellent thing," with which I heartily agree. 'Tis ever better to laugh than to cry, though I admit that cross-ventilation may be no laughing matter to those subjected to it. I can only commiserate with them on their insufficient perception of the humour of that plan, even though it may be somewhat savage humour; but some people have no sense of the humorous, particularly when it takes the form of a cold draught, when they want to be warm.

"An Old B.N.D.C. Boy" points out that "Humanitarian," who has dealt so trenchantly with the evils of cross-ventilation, "has told us nothing but what is instilled in the most elementary mind." Quite true; but in spite of this frank admission of the truth of "Humanitarian's" strictures, he rather inconsistently continues to champion cross-ventilation. He further says, "Neither can we separate heating from cross-ventilation." Now, the accepted authorities are of one opinion in respect to that point—viz., that the heating of a building should always be kept separate and distinct from the ventilation. The Board of Education states, in connection with the ventilation of schools, "Combined systems of heating and ventilation, in which air raised to a sufficient degree to warm the rooms is used for ventilation, are not generally desirable in a school."

I note that cross-ventilation was first tried in a school for the mentally defective, with satisfactory results. If this means the survival of the fittest and consequent reduction in the expenses of the institution, from that point of view I can understand the results being satisfactory; but is it not rather rough on the mentally defective to spring cross-ventilation on them in this fashion? Look-like taking advantage of their infirmity, which is hardly fair and not playing the game. The promoters of cross-ventilation doubtless knew what they were about when they made their maiden effort on the mentally defective: that was a very wise precaution, as there is no saying what might have happened if they had sprung their system all at once on those who were not mentally defective. It makes one cold to think of it. It has been said that this system could only be employed with impunity on helpless little children, but the mentally defective are even a safer mark. It is a system that Mr. Hyde would approve of, but not Dr. Jekyll, though he, as a medical man, stood to profit most by it.

Respecting the control of cross-ventilation, unless the windows are entirely closed, no possible adjustment of them could prevent the cold outer air, passing into a warmer

atmosphere, from descending in the form of a down-draught and returning the exhausted air to be rebreathed. "An Old Boy" (I trust he will pardon the abbreviation) does not make it clear in what way the failure of artificial ventilation at the House of Commons proves the value of cross-ventilation. Two failures do not make a success, any more than two blacks make a white. He also seems to be labouring under an hallucination that your correspondents who are opposed to cross-ventilation approve of mechanical ventilation and are in some way responsible for the failure of that method at the House of Commons. Now, I have seen nothing in the correspondence that should in any way lead him to believe this. On the contrary, natural ventilation on common-sense lines, to which cross-ventilation is the antithesis, seems to be unanimously favoured.

I am sorry to see that "An Old Boy" is in agreement with "our friends the enemy" in their opinion that we are a degenerating people. In this there may, perhaps, be some little truth, if the employment of cross-ventilation may be taken as a symptom.

Let us hope, however, that he is as mistaken in his estimate of his fellow-countrymen as he is in respect to cross-ventilation, and that we are not quite so decadent and degenerate as he would have us believe.

When your correspondent says "we unfettered advocates of cross-ventilation can now comfortably sit on the fence," he is again a little inconsistent for such an out-and-out advocate of that system to which he has declared himself bound; he can hardly be "unfettered," and when he states that he and his co-advocates are "sitting on the fence," that attitude is not usually regarded as a measure of confidence.

I do not know if he is a member of the Old Boys' Corps or the Royal Fencibles; but, at any rate, as he is not at present at the Front, I assume it is the back fence on which he and his fellow-advocates roost—"Birds of a feather flock together," you know. However, it is satisfactory to know that "An Old Boy" and his cronies are comfortable on their perch, and I am sure the children who are enjoying the delights of cross-ventilation must envy them.

I observe that "Beaten," who is, apparently, an architect, says of cross-ventilation by means of window openings: "On entering the ward one cold windy day lately, I noticed all the hopper sashes open on both sides, the radiator inlets shut, and a perfect blizzard tearing across the ward." (The italics are mine.) This is most instructive, and as an instance of first-hand evidence of actual personal experience of cross-ventilation could not be bettered. It is definite, conclusive, and convincing. The curious point is, however, that "Beaten" also is an advocate of cross-ventilation, and proceeds to say, rather illogically, that because your correspondents who disapprove of cross-ventilation have offered no alternative, therefore cross-ventilation is the best. If I have read the correspondents' letters aright, I take it their one and sole object has been to draw attention to what you have so aptly described as "a crying evil," in the hope that it may thereby be remedied, and not to air pet theories of their own, if they have any. That they leave to others.—I am, etc.,

ARGUS.

Lieut.-Col. Edwin Holt, principal of the firm of Messrs. Robertson, Bruce, and Co., oil and colour merchants, Liverpool, died on Sunday at Fern Hill, New Brighton.

At Friday's meeting of the Tyne Improvement Commissioners, held in Newcastle, the appointment, previously made by a special committee, of Mr. R. F. Hindmarsh as chief engineer to the Commission, in succession to Mr. N. G. Godye, at a salary of £1,000 a year, was confirmed. Mr. Hindmarsh was chief assistant engineer, and in his place Mr. W. A. Foulis, resident engineer at the docks, was appointed at a salary of £560. Mr. G. M. Vaughan, late engineer on the River Ripple works was elected as dredging superintendent at a salary of £250 per annum.

STATUES, MEMORIALS, &c.

GLASGOW STATUE TO EARL ROBERTS.—At a meeting of the sub-committee on Earl Roberts's memorial, in Glasgow City Chambers, on Friday, arrangements were completed for the erection in Glasgow of a statue to the late Field-Marshal Earl Roberts, to be an exact reproduction of the equestrian statue of the late Lord Roberts executed by the late Mr. Harry Bates, A.R.A., and erected in the Maidan at Calcutta. The equestrian figure is 11ft. 6in. high, and stands on a pedestal 18ft. 6in. The lower part of the pedestal is formed of a base with columns, panels, and inscriptions, flanked at one end by a bronze figure in ancient and decorative armour representing "War," and at the other end by a female figure representing "Victory" seated on the prow of the ship of State. The statue, friezes, figures, and inscriptions will be in bronze, while the pedestal will be in granite. The committee have in hand over £6,650 towards the cost.

STAINED GLASS.

WESTMINSTER ABBEY.—Mr. George H. Radcliffe, the chapter clerk to the Dean and Chapter, informs us that the design of Mr. J. N. Comper has been accepted for the memorial stained-glass window to the late Lord Strathcona. The position allotted is on the north side of the nave, next to the window to Lord Kelvin.

PARLIAMENTARY NOTES.

WESTMINSTER HALL.—Mr. Gulland, on Feb. 11, representing the First Commissioner of Works, said, in reply to Mr. King: The scheme of repair of Westminster Hall roof is based on a most thorough and exhaustive survey. It has been examined by Sir Aston Webb and Mr. Reginald Blomfield, both past-Presidents of the Royal Institute of British Architects, and representing the Royal Academy and the Royal Institute of British Architects on the Ancient Monuments Board for England. These gentlemen, in reply to Mr. Caroe's letter in the *Times*, say that they consider that the scheme adopted—namely, of reinforcement by steel framing, is the most satisfactory solution of the question. By it the maximum amount of the old timbers of the roof will be preserved. Mr. Caroe's statement is not supported by any detail, nor is it known how his estimate is arrived at. In any case, it would practically amount to the substitution of a new timber roof for the old one—an entirely undesirable proceeding in the opinion of the First Commissioner. He sees no reason, therefore, to change the principle on which this most important work is now being conducted.

TIMBER FOR THE WAR OFFICE.—Mr. W. Young asked the Financial Secretary to the War Office, on Tuesday, the value of the timber purchased for the War Office up to the present time by their buying agent, Mr. Montague Meyer; and whether Mr. Meyer had sold any wood or timber to the Government from his own stocks.—Mr. H. Baker: The value of the timber purchased through Mr. Meyer is approximately £600,000. I am informed by the Office of Works that as much of his stock as was suitable for War Office purposes was taken over at the actual ascertained cost price.

The town-planning committee of the Birmingham City Council were engaged on Friday, under the presidency of Alderman Neville Chamberlain, in the preparation of a new scheme of town planning for South-West Birmingham. The area of land covered by the scheme is about 9,200 acres, and it forms the largest scheme yet undertaken in Birmingham. It applies to all the undeveloped land in Selly Oak and Northfield Wards, and will connect on the one side with the scheme now being prepared for South Birmingham, and on the other side with the Quinton and Harborne scheme.

An appeal by Messrs. Louis Beyfus, freeholders of a restaurant at the corner of Old Compton-street and Wardour-street, against the Westminster City Council in respect of compensation for the loss of their property, was down for hearing before Mr. Allan Lawrie at the London Sessions on Friday. The Council having decided to take a slice off the property for the purpose of street-widening, it was found necessary to take the whole of the premises, although only a part would be thrown into the thoroughfare. Adjoining premises had been demolished, and a part of the space added to the roadway. It was agreed between the parties that £2,800 should be paid to Messrs. Beyfus, and the jury returned a formal verdict to this effect.

Our Office Table.

Proposals in reference to the rebuilding of Belgium were discussed at a four days' international conference held at the City Guildhall on Thursday, Friday, Saturday, and Monday last, under the auspices of the Garden Cities and Town-Planning Association. M. Hellepatte, the Belgian Minister of Agriculture and Public Works, presided, and among the speakers were Mr. Herbert Samuel (President of the Local Government Board), Mr. Ewart G. Culpin, Mr. Ebenezer Howard, Mr. Raymond Unwin, Mr. Montagu Harris, M. J. C. van Spaendonck, Professor Van Hecke, and Mr. H. R. Aldridge, the chief topic discussed being the applicability of English garden-city principles and methods to Belgian requirements. M. Van Spaendonck pointed out that the suggestion for the construction of garden cities in Belgium would lead to no practical result if they did not take into account that Letchworth was constructed for the common good on what might be called communistic principles. In Belgium it would be difficult to put such communism into practice, for that country had comparatively few wealthy men desirous of furthering projects for the public welfare, such as existed in England. The president, in summing up the discussions, said that there were certain broad principles on which they were all agreed, and he suggested that these should be agreed to in the form of resolutions. The resolutions, which were unanimously carried, after expressing general agreement with the principles of the Garden Cities and Town-Planning Association, recommended that plans in harmony with those principles should be prepared of the towns and villages that have been wholly or partially destroyed in Belgium; that recommendations should be made with regard to width of streets, etc., with a view to securing hygienic conditions for the inhabitants, and that the distribution of State grants should be made subject to the adoption and execution of plans of laying out, extension, and improvement.

At a general assembly of Academicians and Associates, Mr. J. A. Arnesby Brown, A.R.A., and Mr. Joseph Farquharson, A.R.A., both landscape-painters, have been elected Royal Academicians. Mr. Arnesby Brown, who is a native of Ruddington, Notts, and studied at the Herkomer School, Bushey, is in his fiftieth year. He is best known by his landscapes in East Anglia and Cornwall, and by his studies of cattle. His work is hung in the Tate and Guildhall Galleries, and those of Aberdeen, Brisbane, Liverpool, Manchester, Nottingham, Ottawa, and Preston. It is a dozen years since he was elected as Associate of the Academy. Mr. Farquharson's Associateship is of three years' longer standing, and his works have been since on the walls at Burlington House without intermission since 1873. His snow scenes in the Highlands, both in oils and water-colours, are widely known, and easily recognised by their fine qualities.

Among the artists who are serving their country at the front is Mr. Henry Tonks, assistant professor at the Slade School. Born in 1862, Mr. Tonks was educated at Clifton College. Fitting himself for the medical profession, he became a Fellow of the Royal College of Surgeons. Later he resigned the practice of medicine and anatomy in favour of art. At the Slade he has helped in a signal and effective way in the development of prominent artists such as Mr. Augustus John and Mr. William Orpen. Now he has gone to the front as a surgical dresser. Mr. Oswald Birley, the accomplished portraitist, has joined the Royal Fusiliers; Mr. Gerard Chowne, another member of the Modern Portraiture, who, too, specialises in flowers, the Artists' Corps; Mr. Keith Henderson, the Wilts Yeomanry; Mr. Louis Wertier, the London Scottish; Mr. C. S. Jagger, who has twice been in the final competition for the Rome Scholarship for sculpture, the Artists' Rifles. Then two Royal Academy gold medallists have done gallant service: Mr. F. E. J. Crisp, who won the blue ribbon for

painting in 1907, was killed while leaving the trenches in January, while the architectural gold medallist of 1913, Mr. D. J. Chisholm, went to the front with the first detachment of the London Scottish. Artists who have volunteered for home defence include Sir George Frampton, R.A., Mr. Bertram Mackennal, A.R.A., Mr. Mouat Loudan, and Mr. Arthur Rackham, the inventive illustrator.

Laxton's Price Book (Kelly's Directories, Ltd., 4s.) has reached its ninety-eighth edition, and embraces its usual features, all brought up to date so far as that is possible under the present disturbed conditions of prices of materials. Several sections, such as those on lighting and fireproof construction, are amplified by the addition of fresh matter, and the notes on cases in the Courts are, as usual, well selected and summarised.

At a meeting of the Institution of Heating and Ventilating Engineers, Mr. W. R. Twigg, in the course of a paper on "Gas Heating," described a simple means of finding if there was contamination of the air in the room by products of combustion escaping under the cowl. For this purpose a thick glass plate is chilled in ice, and when the fire has been burning for some time is held edge towards it and quite close to the cowl. If any products escape, they condense on the plate. A permanent record can be obtained by making a photograph of the shadow of the plate. Mr. Twigg thinks there has been very great improvement in gas-fires in this respect, and he pointed out the necessity of having a clear run for the hot gases to the chimney. With modern grates the test just described gives a clean plate.

The iron church in Osborne-road, Broadstairs, is to be replaced by a brick building for 500 persons. The contractor is Mr. J. T. May.

The city council of Carlisle decided the other day, after much discussion, to build a technical school for the city on a site hereafter to be selected.

A boys' home is about to be built at Hollybrook for the Southampton Board of Guardians. The contractor is Mr. F. Cawte, of that town, whose tender was accepted at £10,870.

The Darlington Rural District Council have appointed Mr. M. Pallister surveyor to the council in place of Mr. J. Robinson, resigned, and Mr. J. Bowron sanitary inspector in succession to Mr. Pallister.

At the last meeting of the Gravesend Town Council the works committee reported that Mr. Richard Saunders, the assistant surveyor, had tendered his resignation, having been appointed borough surveyor of Sandwich.

At the last meeting of the rural district council of Sevenoaks ten tenders were received for the erection of cottages at Westerham, the highest being £3,988, and the lowest £2,840. It was remarked that this was about £1,040, or some £150 a cottage, above the estimate. The tenders were referred back to the housing committee.

Mr. W. Shackleton, A.M.Inst.C.E., borough surveyor of Nelson, has been elected borough surveyor of Rotherham, in succession to Mr. E. B. Martin, M.Inst.C.E., the new borough engineer of Salford. Under pressure from his town council, Mr. Shackleton has, however, agreed to remain at Nelson, at a substantial advance in salary, and the appointment at Rotherham is still unfilled.

The death occurred at his residence, Seamore, Bo'ness, on Friday, of Mr. William Thomson, J.P., at the age of eighty-eight. He was born at Dunnipace, Stirlingshire, and began life in the service of the Monkland Railway. About fifty years ago he established the firm of Messrs. Thomson and Balfour, timber merchants and sawmillers, at the Links, Bo'ness. Both partners retired some years ago; but the works are still carried on by one of Mr. Thomson's sons.

In the House of Lords on Tuesday the following among other private Bills were read a second time: Ashington Urban District Council Bill, Eastern Valleys (Monmouthshire) Joint Sewerage Board Bill, Plymouth Corporation Bill, Rotherham Corporation Bill, Salop County Council Bill, Sheffield Corporation (Tramways) Bill, South Shields Corporation Bill, Sunderland Corporation (Wearmouth Bridge) Bill, and Wolverhampton Corporation Water Bill.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Town Planning Institute. "Economies of Town Planning in Relation to Land Development," by George L. Pepler, F.S.I. 8 p.m.
Royal Sanitary Institute. Discussions upon "The Construction of Sewers," and "Housing from a Sanitary Inspector's Standpoint." School of Technology, Sackville-street, Manchester. 7 p.m.

SATURDAY (To-morrow).—Annual Dinner of Clerks of Works Association. King's Hall, Holborn Restaurant. 6 p.m.

MONDAY.—Royal Academy. "The Arts and Crafts of the Flemish Renaissance," by Professor E. S. Prior, M.A., A.R.A. 4 p.m.
Victoria and Albert Museum. "Westminster Abbey," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.
Architectural Association. "Architecture of the Present and the Future," by A. E. Richardson, F.R.I.B.A. 8 p.m.
Royal Society of Arts. "Motor Fuel," Fothergill Lecture No. 2, by Prof. Vivian B. Lewis. 8 p.m.

WEDNESDAY.—Royal Academy. "The Two Eras of Flemish Sculpture and Painting—Flanders and Brabant," by Professor E. S. Prior, M.A., A.R.A. 4 p.m.
St. Paul's Ecclesiastical Society. "Wood Carvings in English Churches," by G. C. Druce, F.S.A., St. Paul's Chapter House, E.C. 8 p.m.
Royal Society of Arts. "The Economics of the War," by Dr. W. J. Ashley. 8 p.m.

THURSDAY.—British Museum. "Roman Palaces and Pompeian Houses," by Banister F. Fletcher. 4.30 p.m.
Sheffield Society of Architects and Surveyors. "The Legacy of Past Civilisations to Present Culture," by F. G. Foster.

FRIDAY.—Glasgow Architectural Craftsmen's Society. Discussion on "Cheap Cottages." 8 p.m.
Leicester and Leicestershire Society of Architects. "The Place of Iron in Architecture," by Rev. E. I. Fripp.

Mr. Hugh W. Flanagan, B.E., B.A., architect, 2, South Mall, Cork, has been appointed Lecturer in Architecture at the Crawford Municipal School of Art, Cork.

Mrs. Grace Florence Greenwood, wife of Mr. Benjamin Isaac Greenwood, builder and contractor, Arthur-street, E.C., died on Sunday last at their residence, Coombe Hollow, Shoreham, Kent.

The borough engineer of Bournemouth, Mr. Lacey, has been instructed to prepare plans for two groyne, at a cost of £2,000, to be placed near the East Cliff lift, and the provision of bathing-pools is also being considered.

A conversazione was held by the London and Middlesex Archaeological Society at the Bishopsgate Institute on Tuesday. A lantern lecture was given by Mr. Allen S. Walker on "The Ancient Cities of Belgium and England: a Comparison."

Mr. George Calvert, road surveyor for No. 1 district of Aberdeen County, has been appointed by the Haddingtonshire Western District Committee road surveyor for the district, in succession to the late Mr. Thomas Callen, of Haddington.

Messrs. Baker and E. L. Lutyens, the architects for Imperial Delhi, who arrived in that city in the last week of December, have gone into residence near the Public Works Department offices at Raisina, and commenced work on Imperial Delhi.

Alderman George Harkus, retired cabinet maker and upholsterer, of Newcastle-on-Tyne, died on Saturday, aged seventy-four years. He had been a member of the corporation since 1887, served as sheriff in 1895, and was mayor of the city in 1898.

Dunfermline School Board have purchased from Sir William Robertson Wooser's Alley House and grounds, in order to utilise the site for the erection of a central supplementary school. The purchase price (£2,860) was that which was paid by Sir William Robertson several years ago.

At the meeting yesterday (Thursday) afternoon of the City Corporation, the Improvements Committee reported that they had acquired interests in the following properties in Leadenhall-street, needed for the widening now in progress of that thoroughfare: Sussex public-house, No. 51—sub-leasehold and trade interests £7,000 (amount of claim, £8,680); Nos. 54 and 55—sub-leasehold and trade interest in ground floor and basement £425 (claim, £580), and in first floor £1,850 (claim, £3,868); Nos. 57 and 58—sub-leasehold and trade interest in part of ground and first floors £9,500 (claim, £17,710).

TRADE NOTES.

Boyle's latest patent "Air-pump" ventilator has been applied to the Central Council Cookery Centre, Ipswich.

Mr. Michael A. Moynihan has been appointed deputy borough surveyor of Dublin.

The Rev. Canon Buckle, of Astley, Worcester, died suddenly on Friday, aged sixty-one years. His training as an architect was of great service to him in the position of hon. secretary of the Church Extension Fund for the Archdeaconry of Worcester. He was Rural Dean of Worcester, and Hon. Canon of the Cathedral. For nearly twenty-one years he had been rector of Astley, and during that period had restored the church.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

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Advertisements for the current week must reach the office not later than 3 p.m. on Thursday. Front-page advertisements and alterations or stop orders for serial advertisements must reach the office by Tuesday morning to secure attention.

RECEIVED.—G. and B.—S. M. W., Ltd.—A. D. and Son.—G. and Co., Ltd.—G. A. W. and Son.—K. and Co., Ltd.—S. U. D. C.—G. F. W.—W. J., Ltd.—J. and J.—S. P. Co., Ltd.—H. and G.—J. W.—F. A. Co., Ltd.—B. S. Co., Ltd.—J. and T.—R. A. and Co.—J. G.—E. P. A. and Son.—W. and G. F.—F. McN. and Co., Ltd.—H. C.—T. T.—J. M. and Co.—J. T. and Co., Ltd.

FINIS.—Yes.

Q. S. A.—Please send.

R. J.—A little outside our sphere.

N.—Sorry, but the sketch is not capable of reproduction.

W. J. J.—The point has not yet arisen in connection with the Act, and, as we said at the time, it was passed as one with regard to which it is not possible to predict the view likely to be taken by a judge or jury.

EDUCATIONAL.—The following illustrations of secondary schools have appeared in the BUILDING NEWS during the last half-dozen years: Blyth, April 29, 1910; Brentwood, April 3, 1914; Castleford, August 27, 1909; Doss, July 2, 1909; Peterborough, April 12, 1910; Streatham, August 16, 1913; Whitby, Dec. 13, 1909; Whitley Bay, Feb. 21, 1914; York, Feb. 16, 1912.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us. Timber quotations we omit altogether, as published figures differ so widely that they are, we fear, in many cases quite unreliable.

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£8 10 0 to £8 12 6	
Wrought-Iron Girder Plates	8 10 0 ..	10 0 0
Steel Girder Plates	8 17 6 ..	9 17 6
Bar Iron, good Staffs	6 5 0 ..	8 10 0
Do., Lowmoor, Flat, Round, or Square	22 0 0 ..	0 0 0
Do., Welsh	5 15 0 ..	5 17 0
Boiler Plates, Iron—		
South Staffs	8 0 0 ..	8 15 0
Best Smedshill	9 0 0 ..	9 10 0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s. to £9. Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton. £13 0 0	Per ton. £13 10 0
Best ditto	13 10 0 ..	14 0 0

	Per ton.	Per ton.
Cast-Iron Columns	£6 17 6 to £8 10 0	
Cast-Iron Stanchions	6 17 6 ..	8 10 0
Rolled-Iron Fencing Wire	8 5 0 ..	8 10 0
Rolled-Steel Fencing Wire	7 5 0 ..	7 10 0
Galvanised	8 15 0 ..	9 5 0
Cast-Iron Sash Weights	5 15 0 ..	6 0 0
Cut Floor Brads	10 15 0 ..	—
Corrugated Iron, 24 gauge	16 0 0 ..	—
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14 5 0 ..	—

B.B. Drawn Telegraph Wire, Galvanised—

	0 to 8	9	10	11	12	B.W.G.
£10 10s. £10 15s. £11 0s. £11 5s. £11 10s. £11 15s. per ton.						

Cast-Iron Socket Pipes—	3in. diameter	4in. to 6in.	7in. to 24in. (all sizes)
.....	£6 15 0 to £7 2 6	6 10 0 .. 6 12 6	6 17 6 .. 7 2 6

[Coated with composition, 5s. 0d. per ton extra. turned and bored joints 5s. per ton extra.]

Pig Iron—	Per ton.
Cold Blast, Lillieshall	80s. 0d. to 127s. 6d.
Hot Blast, ditto	87s. 0d. .. 97s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—	72½ p.c.
Gas-Tubes	66½
Water-Tubes	65
Steam-Tubes	65
Galvanised Gas-Tubes	60
Galvanised Water-Tubes	56½
Galvanised Steam-Tubes	50

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	£24 0 0 to	—
Country	25 0 0 ..	—
Lead Barrel Pipe, Town	25 0 0 ..	—
Country	26 0 0 ..	—
Lead Pipe, Tinned inside, Town	26 0 0 ..	—
Country	27 0 0 ..	—
Lead Pipe, Tinned inside and outside	28 10 0 ..	—
Country	29 10 0 ..	—
Composition Gas-Pipe, Town	27 0 0 ..	—
Country	28 0 0 ..	—
Lead Soil-pipe (up to 4in.) Town	27 0 0 ..	—
Country	28 0 0 ..	—

[Over 4in. £1 per ton extra.]

Lead, Common Brands	17 17 6 ..	£18 12 6
Lead Shot, in 28lb. bags	24 15 0 ..	—
Copper Sheets, sheathing & rods	84 0 0 ..	84 10 0
Copper, British Cake and Ingot	69 10 0 ..	70 10 0
Tin, English Ingots	168 0 0 ..	178 0 0
Do., Bars	169 0 0 ..	176 0 0
Pig Lead, in lwt. Pigs (Town)	18 16 3 ..	19 2 6
Sheet Lead, Town	23 10 0 ..	—
Country	24 10 0 ..	—
Genuine White Lead	30 5 0 ..	—
Refined Red Lead	29 0 0 ..	—
Sheet Zinc	69 0 0 ..	—
Old Lead, against account	18 0 0 ..	—
Tin	9 10 0 ..	—
Cut nails (per cwt. basis, ordinary brand)	0 12 9 ..	—

* For 5 cwt. lots and upwards.

SLATES.

	in.	in.	£ s. d.	per 1,000 of
Blue Portmadoc	20	10	12 12 6	1,200 str. sq.
"	16	8	6 12 6	—
Blue Bangor	20	10	13 2 6	—
"	20	12	13 17 6	—
First quality	20	10	13 0 0	—
"	20	12	13 15 0	—
"	16	8	7 5 0	—
Eureka unfading green	20	10	15 17 6	—
"	20	12	18 7 6	—
"	18	10	13 5 0	—
"	16	8	10 5 0	—
Permanent Green	20	10	11 12 6	—
"	18	10	9 12 6	—
"	16	8	6 12 6	—

BRICKS.

(All prices net.)

First Hard Stocks	£1 15 0	per 1,000	alongside, in
Second Hard Stocks	1 11 0	"	" driver.
Mild Stocks	1 9 0	"	"
Picked Stocks for			" delivered
Facings	2 5 0	"	at rly. stn.
Flettons	1 14 0	"	"
Pressed Wire Cuts	1 18 0	"	"
Red Wire Cuts	1 14 0	"	"
Best Fareham Red	3 12 0	"	"
Best Red Pressed			"
Rusbon Facing	5 0 0	"	"
Best Blue Pressed			"
Staffordshire	3 15 0	"	"
Ditto Bullnose	4 0 0	"	"
Best Stourbridge			"
Firebricks	4 0 0	"	"
2½in. Best Red Accrington Plastic Facing Bricks	4 10 6	"	{ Net, delivered in full truck loads in London.
3½in. Accrington Best Red Plastic Facing	£2 10 0		
Bricks	2 2 6		
3½in. ditto Second Best Plastic ditto	1 11 3		
Ditto Ordinary Secondary Bricks	1 17 6		
Ditto Plastic Engineering Bricks	2 0 0		
Sewer Arch Brick not more than 3½in. thickest part	2 0 0		
3½in. Chimney Bricks fit for outside work	2 6 0		
3½in. ditto ditto through and through	2 0 0		
3½in. Beaded, Ovolo and Bevel Jamb; Octagons; 2½" and 3" radius Bullnoses; Stock patterns	3 7 6		
Accrington Air Bricks, 9" x 2 course deep, each 0 0 6			
Ditto ditto 9" x 1 course	0 0 3		
Accrington Camber Arches:—			
3 course deep, 4½" soffit, per foot opening	0 1 3		
4 ditto 4½" ditto ditto ditto	0 1 8		
5 ditto 4½" ditto ditto ditto	0 2 1		
6 ditto 4½" ditto ditto ditto	0 2 6		
3 ditto 9" ditto ditto ditto	0 2 1		
4 ditto 9" ditto ditto ditto	0 2 11		
5 ditto 9" ditto ditto ditto	0 3 6		
6 ditto 9" ditto ditto ditto	0 4 6		

* Net free on rail, or free on boat at works.

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

	White, Ivory, and Salt Glazed.	Best.	Buff, Cream, Other Second.
Best. Seconds. & Bronze. Colours. Colours.			
Stretchers	£12 7 6	£10 17 6	£13 17 6
Headers	11 17 6	10 7 6	13 7 6
Quoins, Bullnose, and 4½in. Flats—	15 17 6	14 17 6	17 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6
Double Headers—	14 17 6	13 7 6	17 17 6
One side and two ends, square—	18 17 6	17 17 6	21 17 6
Two sides and one end, square—	19 17 6	18 7 6	22 17 6
Splays and Squints—	17 7 6	15 7 6	21 17 6
Plinth and Hollow Bricks, Stretchers and Headers—	5d. each	4d. each	6d. each
Double Bullnose, Round Ends, Bullnose Stops—	5d. each	4d. each	6d. each
Rounded Internal Angles—	4d. each	3d. each	5d. each

MOULDED BRICKS.

Stretchers and Headers—	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—	1½ each	1½ each	1½ each	1½ each
Sill Bullnose, Stretchers, and Headers—	5d. each	4d. each	6d. each	6d. each
Majolica or Soft Glazed Stretchers and Headers	£23 17 6			
Quoins and Bullnose	27 17 6			
Compass bricks, circular and arch bricks of single radius 4½ per 1,000 over above list for their respective kinds and colours, Camber arch bricks, any kind or colour, 1s. 2d. each				
Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.				

* These prices are carriage paid in full truck loads to London Stations.

Thames Sand	7 6	per yard, delivered
Pit Sand	7 0	"
Thames Ballast	6 0	"

Best Portland Cement

Ground Blue Lias Lime

Exclusive of charge for sacks.

Stourbridge Fireclay in sacks	27s. 0d.	per ton at railway station.
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STONE.*

Red Mansfield, in blocks	per foot cube	£0 2 4
Darley Dale, ditto	"	0 2 3
Red Corsehill, ditto	"	0 2 2
Closeburn Red Freestone, ditto	"	0 2 0
Ancestor, ditto	"	0 1 10
Greenshill, ditto	"	0 1 10
Beer, ditto	"	0 1 6
Chilmark, ditto (in truck at Nine Elms)	"	1 1 10
Hard York, ditto	"	0 2 0
Do. do. 6in. sawn both sides, landings, random sizes	per foot sup.	0 2 8
Do. do. 3in. slab sawn two sides, random sizes	"	0 1 3

* All F.O.E. London.

Bath Stone, delivered on road	£ s. d.	
waggons, Paddington Depot per foot cube	0 1 7½	
Ditto, ditto, Nine Elms Depot	0 1 9½	
Beer Stone, delivered on rail	"	0 1 1
Ditto, delivered at Nine Elms Station	"	0 1 7½
Portland Stone, in random blocks of 20ft. average:—		
Delivered on road waggons	Brown	White
at Paddington Depot	Whit Bed.	Base Bed.
Nine Elms Depot, or	Per foot cube.	
Pimlico Wharf	£0 2 3	£0 2 4½

TILES.

	s. d.	Divrd. at
Plain red roofing tiles	43 0	per 1000 rly. sn.
Hip and Valley tiles	3 7	per doz.
Brosely tiles	50 0	per 1000
Ornamental tiles	52 6	"
Hip and Valley tiles	4 0	per doz.
Rusbon red, brown, or brindled ditto (Edwards)	57 6	per 1000
Ornamental ditto	60 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 0	"
Selected "Perfecta" roofing tiles: Plain tiles (Peake's)	46 0	per 1000
Ornamental ditto	48 6	"
Hip tiles	3 10½	per doz.
Valley tiles	3 4½	"
"Rosemary" brand plain tiles	48 0	per 1000
Ornamental tiles	50 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 8	"
Staffordshire (Hanley) Reds or brindled tiles	42 6	per 1000
Hand-made sand-faced	45 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"
Hartshill "brand plain tiles, sand-faced	45 0	per 1000
Pressed	42 6	"
Ornamental ditto	47 6	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"

OILS.

Rapeseed, English pale, per tun	£28 15 0	to £29 5 0
Ditto, brown	26 15 0	27 5 0
Cottonseed, refined	36 0 0	37 0 0
Olive, Spanish	39 10 0	40 0 0
Seal, pale	21 0 0	21 10 0
Cocanut, Cochin	46 0 0	46 10 0
Ditto, Ceylon	42 10 0	43 0 0
Ditto, Mauritius	42 10 0	43 0 0
Palm, Lagos	32 5 0	33 5 0
Ditto, Nut Kernel	35 0 0	35 10 0
Oleine	17 5 0	19 5 0
Sperm	30 0 0	31 0 0
Lubricating, U.S.	0 7 0	0 8 0
Petroleum, refined	0 6 3	0 6 6
Tar, Stockholm	1 6 0	1 10 0
Ditto, Arckangel	0 19 6	1 0 0
Linseed Oil	0 2 11	"
Baltic Oil	0 3 2	"
Turpentine	0 3 7	"
Putty (Genuine Linseed Oil	0 9 0	"
Pure Linseed Oil	0 9 0	"
"Storty" Brand	0 9 0	"

GLASS (IN CRATES).

English Sheet Glass: 15oz. 21oz. 26oz. 32oz.			
Fourths	54d.	54d.	54d.
Thirds	54d.	54d.	54d.
Fluted Sheet	54d.	54d.	54d.
Hartley's English Rolled Plate	3d.	3d.	3d.
White. Tinted.	3d.	3d.	3d.
Figured Rolled and Repoussine	3d.	3d.	3d.

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	40 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Fine French Oil	1 1 0
Eggshell Flating Varnish	0 18 9
White Copal Enamel	1 4 9
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 6

Mr. J. A. Phillips, of St. Maby, Cornwall, has been appointed district surveyor to the Newton Abbot Rural District Council in succession to Mr. W. Oliver, who has been appointed an assistant county surveyor for Cornwall.

Major J. Stewart, an inspector of the Local Government Board, held an inquiry at Willesden yesterday (Thursday) as to an application from the urban district council for sanction to borrow £27,016 for works of street-improvement and sewerage.

The corporation of Plymouth have approved the extension of the borough lunatic asylum at Blackadon to accommodate 440 additional patients, and Messrs. Thornely, Rooke, and Barron, architects, of Plymouth, have been instructed to prepare plans. The cost of the extension is estimated at £100,000.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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OUR ILLUSTRATIONS.
Board of Trade New Offices Competition: Design by Messrs. Robert Atkinson and George L. Alexander, A.A.R.I.B.A.; View, Detail of River Front; two Principal Plans, East Front Elevation and Longitudinal Section.—Design by Mr. C. T. Armstrong, A.R.I.B.A.; East and West Elevation, Transverse Section, and two Chief Plans.
A Pair of Houses, West Avenue, Cowley Bridge-road, Exeter. Two plans and view. Messrs. Ellis, Son, and Bowden, Architects.

WAR AND WEALTH.

In any estimate of the effects of the War hereafter on our own industries we are bound to take into account the results of the awful drain on the world's wealth now in progress. We have also to try to form some idea of the effect of the social and political changes that are coming presently. The last task is probably the more difficult one. That changes of vast importance are imminent is almost certain. The downfall of German militarism will re-awaken throughout Europe the aspirations towards democratic ideals which have been held in check during the last fifteen years by the almost fatalistic resignation to the burden of ever-increasing armaments which has drained the resources of the Continent, and, in some measure, those of our Empire. The precise trend of events no one can predict. Here at home, let us hope, we may see an end of the mere vote-catching policy of our own politicians, and that something like consistent adherence to professed principles may raise clear issues, which may be comprehended and faced by the electorate. We were told by Mr. Runciman last week to pay no attention to Socialists just now, and "not to attempt to bring about the Millennium in the middle of a great war." That a good deal of laughter greeted that pronouncement is not surprising in the face of the fact that the Government of which he is a member has, during the past six months, advanced further along the road to State Socialism than its most convinced adherents would have deemed possible this time last year. We have, for the time, nationalised the railways, saved the banks, created a sugar monopoly, endowed the Board of Trade with powers to seize supplies, saved the shipowners by a State risks insurance office, financed one particular great industry—that for the production of dyes—and have done other things which will astonish a good many people when by and by they get to know about them. We are neither condemning nor approving any of these things. We are simply asserting that the State, in the face, we freely admit, of a great emergency, has, without any such endorsement of its conduct as a general election could give, launched out on a course of action which take our word for it—others affected by similar great emergencies will emphatically demand shall be followed, if by majorities of votes they can make it appear that it is imperatively necessary. None of the things which are being done could have been attempted by a poor country. Can similar demands be conceded by-and-by, in like fashion if the means are not forthcoming, or only forthcoming at the expense of

certain sections of the population; and, if not, will revolution, peaceful or otherwise, follow?

No one can tell. But one can estimate with some degree of certainty what the resources of the nation are likely to be in the years immediately following peace. As Mr. Hirst, the editor of the *Economist*, reminded the bankers of Manchester last Friday, the phenomenal decrease of our commerce by about one-third would long ere this have entailed a vast deal of unemployment, but for the exigencies brought about by the development of our military policy, which it is evident was utterly unforeseen by this Government. It was meant and hoped that this should be a Naval war, as far as we were concerned. That is evident—if anyone really doubted it before—from the letters which have passed between King George and the French President at the last moment before peace was broken, and which were held back from publication till last week. The call to arms of first half a million, then a million, and, lastly, three millions of men, practically ended unemployment. The resulting industrial prosperity is, of course, only a temporary and fictitious one. The really remunerative industries have only partly shared it. The machinery and metals industries, and the clothing trades have been taxed to the utmost energies of capital and labour. Most of the expenditure can never be recouped. To meet it we are pawning the wealth of this generation and that of generations to come. The world is fast becoming one vast war-machine. Where is the money or the credit coming from to set the machine at profitable work again? Only from permanently increased taxation and the compulsory observance of a frugality to which all classes have long been strangers. Presently, when the rush of war-work is over, and the dismissed peace workers and the returned soldiers swell the ranks of the unemployed, how is the discontent to be faced?

Mr. Hirst, whom we quoted before, made a rough attempt to estimate the position of the belligerents in regard to debt, on the extravagantly hopeful hypothesis that peace would be declared at the end of this month. His figures were

	Old Debt	New Debt	Less of reserve	Total debt
	£	£	£	£
Great Britain	661	plus 312		973
France	1,315	plus 363	plus 30	1,728
Russia	280	plus 520	plus 30	1,490
Germany	240	plus 520	plus 30	810
Austria	400	plus 383	plus 50	833
Serbia	26	plus 26	plus 4	56
Belgium	148	plus 26	plus 3	174

The figures for Serbia and Belgium were guesswork. The figures for the belligerents

were, he thought, within the mark. If the war lasted till the end of the year he estimated the cost to the belligerents as follows:—Great Britain, 1,587 millions; France, 2,253 millions; Russia, 1,985 millions; Germany, 1,553 millions; Austria, 1,373 millions.

We are to "capture German trade," and recoup our loss that way, say some. But we are all destroying or impoverishing each others' customers. A few are taking substantial toll from the rest of us on the war expenditure; every week instances the collapse of others. If the war ends soon there may be a short-lived boom in some industries; but it will be long before the general depression ends, and during that period labour will be clamouring for employment, capital will be scarce, prices of all necessities will be low, and rates of interest high. Is this Government, or any Government that succeeds it, going to content itself with a policy of *laissez faire*, satisfying itself with the repression of discontent, or will it face emergencies as they arise in some such fashion as it has faced those created by the war?

We are going to lend a combination of dye-makers a million. That is bounty—which all Free Traders have denounced—except the cocoa-makers. Dyes are essential to the trade in fabrics; whether aniline dyes are more indispensable than others some, perhaps, may doubt! We hope, anyhow, the experiment may succeed, and that the Government will protect the interests of all concerned. But are other greater industries to be left to struggle through the bad time unhelped and unencouraged? Agriculture is the first of these. Our own great group of industries comes second. The higher and more complete development of each, the more remunerative are they to those directly concerned, and indirectly to all. There are others of relative importance; but the primary needs of all are good food and good housing, and the due share thereof by all who contribute to their production.

Our own trades have been hit badly by the War. When it began, the workmen surrendered to the London employers, and closed the lock-out. Since then there have been no trade developments to justify a demand for higher wages. With the possible exceptions of joiners employed in the shipbuilding yards, and house-shoers engaged in making huts for the new armies, no members of the building trades organisations have gained any industrial advantage from the war boom. These exceptions are not sufficiently important to influence the rest of the labour occupied in the building industries, with regard to which there is

neither a disposition to demand higher wages, nor a state of trade which would justify it. We have said several times lately that in no industry ought there to be better prospects when peace comes. The shortage of houses all over the kingdom is admitted by all. Surely something can be done to attract legitimate private enterprise to meet that need, and to supplement this by State and municipal aid when necessary? One patriotic landowner, as we mentioned a week or two ago, offered every recruit in his district a freehold site to build a house on. Has the State no similar encouragement to offer those who are defending homes that many of them have never known?

One last word. There is no short and easy road to escape from the comparative national poverty we are drifting to. Trade and commerce, we suppose, must still be our stand-by, evident as it is that London has lost a great deal of its business as the centre of the world's exchanges. Much of that has gone to New York, Amsterdam, and Copenhagen. Whether the "bill on London" will recover its old position we do not know. But we contend that every man and every industry which contributes most effectively to the accumulation of solid wealth here at home, helps best to establish security and confidence, which are the lifeblood of legitimate commerce. And every endeavour to attract the labour of the country to the healthful occupations of agriculture, and the pleasurable avocations of the arts, will do more to insure adequate sustenance to the workers, and to lift them out of the monotony of the drudgery of the work which induces dissipation and trivial recreations as the relief therefrom, than all the politicians who spread their nets simply to catch votes. It is a possibility, to say the least, that any one of us who will do something individually to snatch one worker from the comparatively menial tasks of the mere "hands" and enroll him in the ranks of the trained craftsmen, the servants of science, and the intelligent stewards of the bounties of nature, will do more to develop real patriotism and insure content than all the political nostrum-mongers. It is not even an impossibility that an electorate of such workers might ere long send their representatives to the council of the Nation able and resolved to enlighten mere partisans and place-seekers as to its real needs and the legitimate means of advancing them.

THE ARCHITECTURAL ASSOCIATION.

The monthly meeting of the Architectural Association was held on Monday evening at 18, Tufton-street, Westminster, Mr. H. Austen Hall, F.R.I.B.A., Acting President, in the chair. Mr. H. M. Fletcher, Hon. Secretary, announced that the ordinary meeting arranged for Monday, March 22, had been postponed to *Tuesday*, March 30, as Mr. Hillaire Belloc found himself unable to be present on the former date. Mr. Belloc's paper, to be read on March 30, was entitled "The Changes in the Conception of Artificial Permanent Defences, including those indicated by the Present Campaign," and would be illustrated by lantern-slides.

LECTION OF OFFICERS AND COUNCIL.

The Acting President announced that as no further nominations had been received, the Council's "house list" of nominations of officers and Council for the ensuing session, must be declared to have been unanimously elected. The members elected were as follows: President, Mr. H. Austen Hall; Vice Presidents, Mr. Stanley Hamp and Mr. F. Winton Newman; Hon. Treasurer, Mr. E. Stanley Hall; Hon. Secretary, Mr. H. M. Fletcher; Hon. Editor "A.A. Journal," Mr. F. C. Eden; Hon. Librarian, Mr. V. T. Hodgson; Ordinary Members of Council, Past President, Mr. Maurice E. Webb,

Messrs. C. C. Brewer, H. Farquharson, Ralph Knott, A. G. R. Mackenzie, E. Brantwood Maufe, W. G. Newton, W. J. Palmer-Jones, J. Alan Slater, T. Tyrwhitt, and Philip E. Webb.

Mr. A. E. Richardson, F.R.I.B.A., read the following paper on

THE ARCHITECTURAL SPIRIT OF THE AGE.

Few things reveal the character of nations in a truer light than the circumstance of war. For the contrast to normal conditions throws into strong relief the temperament of a people, and demands an introspective mood. Such a time is the present; the leading nations are gripped in the throes of a titanic struggle; henceforth the whole complexion of things will be changed, and the outlook of individuals and nations will broaden to a deeper understanding of life. War is beneficial to a nation; it invariably brings a chastening spirit which finds its most cogent expression in architecture. This is the text of my paper; the sermon and the rhetorical flourishes will follow. The audience I desire to reach consists of two parts: of those young architects to whom the future of English architecture will be entrusted, and of that portion of the intelligent public who are in a position to exercise patronage and appreciation. I shall endeavour to express the truths I have gleaned from a study of modern architecture, and to indicate sources of inspiration which, although familiarly known, are not appraised at their true value. It is essential that we, as English architects, should emancipate ourselves from the cloying influence of insular apathy, enjoy an enlarged vision of architectural achievement in other countries, and to profit by the experience. The travelled section of the public has a disinterested view of modern architecture, and, therefore, is in a position to voice its likes and dislikes. It is, notwithstanding, bewildered by the jargon of opposing schools; it cheers to the echo newspaper controversy and endeavours to believe in the latest resuscitation of some threadbare style. In despair it turns to pure reproduction and continues to live in buildings of familiar aspect. But all the time there is a sense of keen disappointment that the new building does not equal the old work either in spaciousness or simplicity, and, despite the expense, does not approach the excellence of some dimly-remembered foreign structure. Recent years, however, have witnessed remarkable earnestness among the younger members of the profession, and we have seen the development of architectural schools whose work sufficiently testifies to the serious purpose of the students. This is a sign auguring well for the future; its immediate results are discernible in the streets of our cities. From the foregoing it is reasonable to argue that the future development of architecture in this country on academic lines is dependable on two primary factors. First,

THE EDUCATION OF ARCHITECTS.

This must be consistently undertaken to fit them for the position of arbiters of taste. They will then be the better equipped to guide the public, and above the temptation of pandering to the passing fashion. Secondly, the public must be encouraged to an understanding of what organic architecture means, and weaned from the lures of the house decorator and the furniture dealer. The 18th century affords an instance of the attitude of patrons and architects. In the early period the patrons educated the architects and directed the mode; the latter, however, were not content to be exploited, and towards the second half of the century the directorship had passed almost entirely to the architects, although it should be borne in mind that in those days the cultivated patron was usually a man of taste and in a position to advance sound theories for the artists to accept. To-day there is little, if any, co-operation between patron and artist; hence the lack of confidence, the warring of opinions, and the numberless innovations, all of which are against the theory of the art. The 19th century was, in the main, a period of experiment, during which the strength of the Classic tradition as developed from the Italian Renaissance, was proved. I do not

refer to the tradition in Great Britain, which is purely local, but to the broader acceptance of the Classic spirit and its manifestations on the Continent and in America. This is the subject for which I make my appeal. From an architectural standpoint the Classic spirit is what we are all striving for; it implies a disinterested search for the ideal; it means the delight in reticence and perfection; moreover, it is the reverence for permanence and continuity. It demands of a work of architecture, not that it should be clever and original, but that it should be grand and noble. It forswears loose individuality and hysterical emotion, and seeks to express trained individuality and restrained feeling. The Classic spirit is animating and real; it continually looks for the intrinsic, and will not countenance the casual. It is akin to the monumental and the eternal and rejects the instantaneous, however brilliant. It is indivisible from tradition, in which it is steeped and revels. When the Classic spirit inheres in a work of architecture it forces one subjectively to recall the whole atmosphere of beauty belonging to the works of antiquity; it brings to the mind visions of form and composition, faintly remembered, and we discern the old truths appearing anew as the chief attributes of the building we are studying. A clear interpretation of the Classic spirit means a return to the sheer joyousness of living; it does not mean that we are to deny either originality or personality to our architecture; these are among the essentials, they are inevitable, and are encouraged by the conditions of the problem. But we should endeavour that our new buildings, in all the dignity of their truth, present anew the old spirit, seen from a modern standpoint, and adjusted to our own age. The eclectic tendencies of the last century, which were directed to the exploitation of historical motifs, are now undergoing a further extension, owing to the advance of our point of view. Formerly it was the practice to adhere to certain recognised sources of inspiration, such as Greek, Roman, and Italian, with a friendly eye on contemporary France. Parallel to this procedure there rapidly developed a tendency to resuscitate the picturesque and romantic buildings of our insular history, culminating in a series of indecisive revivals. We are just recovering from this outburst of misapplied activity, and although in amateur quarters opposition is offered, the neo-Classic tradition of three hundred years will prove the basis for further development. The attitude we shall in future adopt towards the antique will be akin to the use of a touchstone—we shall measure our achievements by the relics of antiquity, but we shall never again make the mistake of pedantry. It should be borne in mind that the native tradition is not strong enough of itself to be expanded continuously; it needs to be constantly augmented and fostered by the fusion of fresh ideas. Native and local traditions, notwithstanding their brilliancy, need careful tending; there is a limit to their traditions, notwithstanding their brilliancy, inevitably end in a species of *cul de sac*. If our attitude towards the Classic spirit is broad enough our position is strengthened, for we can look upon all styles, from Egyptian to Italian, as members of one family, and for the sake of argument we can include Hindoo and Chinese. The exploitation of any one of these styles would be dangerous, but modern investigation has proved how limited are the moves governing composition and how immutable are the laws of design; this allows of the study of form, irrespective of history. The Classic ideal, as I wish to present it, has little in common with the usually accepted idea of the "Classic School" either of the Renaissance or of to-day. It is Greek in its modernity, Roman in its breadth; it holds all the charm of Italy, and the mystery and colour of the Orient. Its purpose is to add stone by stone to the pyramid of tradition, but it does not seek to overthrow the structure.

THE DEVELOPMENT OF ARCHITECTURE.

I now come to the main object of my paper, which is to explain the theory of modern

architecture, and to hint vaguely at future developments, signs of which are already in evidence. It is not my purpose to deal extensively with recent English work; a better picture of that subject can be obtained by comparing it with the notable buildings recently erected on the Continent and in America. My interpretation of the term "Modern Architecture" is a wide one; it embraces the last two centuries of building evolution, and includes structures from Petrograd to Gibraltar, from America to Japan. This course of action enables me to illustrate the tremendous impulses at work shaping the architecture of to-day and destined to influence the work of the future. To prove, on the one hand, that development in design is gradual and depends entirely on the work which has preceded it, and, further, to show how every departure from the sensible and usually accepted leads to meaningless caricature. The iniquitous example of competitions, together with the apathy and carelessness of many architects who do not take their profession seriously, accounts in a measure for the tricky originality and affectation which disfigure English work of to-day. To rightly estimate the future development of architecture, except through the media of current events, is a task for the Medes and Persians; it is only possible to conjecture what may be reasonably expected from the best activities of the present time. The progress of architecture reveals the intellectual stamina of a people in a way that nothing else does; but there is every indication that the esoteric art is at last assuming an international character, is tending towards academic principles, and the banishment of provincialities from design. In time there will ensue a universal building language understood by all the nations; it implies the realisation of the Classic spirit. In England at present we are desperately lagging in the track of other countries; this is not a lamentation—it is the truth. We are outclassed by the French in their handling of plan and traffic problems, and we are jealous of our American cousins. Our own tradition is little understood and falsely rendered, for realising that the spirit of the tradition alone needs consideration, and not, in the lust for originality, a mad caricaturing of its finest models.

THE TRUE MEANING OF MODERNITY.

We are on the point of broadening our artistic horizon to the true meaning of modernity and to study the Classic masterpieces of every country; no longer are we passionate to revive historical expressions, but fired with the greater ambition to emulate and excel those masterpieces that have aroused our cupidity. It is at last realised that the romantic and picturesque are not the sole attributes of architectural expression; that laws of form, composition, character, and propriety must be given full consideration. The Babylonian confusion of the past years is clearing, and a way out of the architectural maze is shown by the old Classic truths; we have advanced to-day in our critical powers, if not in attainment. It is necessary, to approach the problem of design from the Classic standpoint, in the full acceptance of that euphonious term, to view varying conditions of building with that distant attachment which alone produces noble architecture; to reason and apportion plans and elevations in sympathetic consonance, to refuse meretricious and popular movements in favour of the academic, and to elevate intellectual architecture in the public estimation. The possibilities of future development likely to arise from an observance of this theory are illimitable. We must not take too much account of the convenient signposts raised by litterateurs who divide art history into phases and groups, and attempt to influence public opinion in a personal way; but we must regard the whole Classic field as offering models; then we shall understand the symbols of our own time and adjust them to specified requirements. Foreigners attribute our weak attitude towards art to the fact that we do not possess a Ministry of Fine Art, owing to the reluctance of our rulers, as well as physical

insensibility and the sordid nature of our commercial habit. Many opine that the Protestant religion is the cause; the failing exists in our inaccessibility to foreign ideas of form and composition. It is my firm conviction that the spirit of the age, in so far as architecture is concerned, is to be found in the world's architecture of the last two centuries. This period contains the impulses which are moving us to-day. True, during this time many experiments were attempted, but these we can afford to pass by; the real achievements alone concern us. If we study our own Classic tradition, from Inigo Jones to Cockerell, we are surprised at the up-to-date character of the best works, and we are sufficiently conversant with the rules to continue the sequence; this procedure, however, is not entirely satisfactory. We must refer to the French school, particularly to those works of the 18th and 19th centuries, from Mansart to Pascal, and the comparison will prove our shortcomings. We must explore the cities and towns of Italy for the buildings of the same period, particularly Turin, Naples, and Rome. I could name a host of Italian architects whose works should be studied; but those of Maderno, Niccolini, and Sacconi are comprehensive. Likewise, the work of the Austrian architects in the cities of the Trentino, for example, Nobile, Ferstel, Pertsch, and Molari at Trieste, and Von Hansen at Vienna, and others at Buda Pesth. The modern architecture of Spain has never been clearly explained. The magnificent buildings at Petrograd and Moscow, legacies of the Napoleonic régime, are unknown to the majority. Even modern Greece and the cities of the Balkan States hold good motifs. And then we have the example of America, with its wealth of modern architecture and the passionate obsession of its leading architects for scholarly work. Finally, I must add

A WORD FOR GERMANY.

not in favour of the modern hobgoblin, pickelhauben manner, which to my view appears as the play of vulgar children, and in its coarseness shows the brutal influence of the military spirit; but to German architecture of seventy years ago, when the French influence was in the ascendant. I need only mention the names of Langhans, Schinkel, Leo van Klenze, and Chateaufort to convince you of what Germany has lost. We are in a position to-day to refer to, and appreciate at their proper value, the great folio volumes of the 19th century: the compilations of Durand, Krafft, and Ransonette, Thioulet, Letarouilly, Haudebourg, Rossini, Isabelle, Canina, and others. These books form the chief treasures in the libraries of such men as Cockerell and Barry, and McKim was well versed in their use. Such splendid guides to the theory of architecture should prevent us from following the fatal lure of individualism, and their study should promote consistent sequence. It should also be remembered that an individual architect can do little to work a change; styles of building have been the work of centuries, the produce of nations, and the influence of a single mind can do little to alter the trend of events. I must warn young architects of the fetish of craftsmanship, which has been worshipped to excess; also of the doctrines of many who hold the creed that design is the outcome of construction, and forget that the reverse is the case; conception of the whole inevitably precedes the construction of parts, the latter function being entirely secondary. There is, of course, some overlapping in the application of this theory, but it is recognised that conception subordinates all other considerations. There are two other items to be thought of—namely, adventitious originality and the practice of innovating detail. Both evils are found in contemporary English architecture, one consists of a passion for extraordinary composition of masses, and the other, a lesser evil, is the desire to create new styles of mouldings. Both methods are complex and false and collectively result in a species of art Classic which in effect is the worst legacy of L'Art Nouveau. Then we have the commercial school, noted for its ability to understand

architectural character. The coteries who form this school are content to flinch any features which are in the fashion, and to display their crustacean trophies without regard to convenience or beauty. I have expounded my idea of the term "Modern Architecture." I have referred you to the antique for beauty of conception, technique, and detail; to the Italian Renaissance for pure form, to the French for modern planning and composition, to the English tradition for reticence, to America for breadth of outlook and enterprise, to modern Italy for vigour, and to Germany for frightfulness. By means of the lantern-slides I hope to qualify my arguments, and the following synopsis will show the line I intend to take. We shall view some important buildings of the English tradition, followed by the parallel development in America. Then we must discuss some notable examples of the French tradition in France and other countries. I shall touch lightly on one of the finest buildings in Naples. If there were time to pursue the subject we could undertake a world tour. My object will be to show that the modern domestic school needs chastening if it is to compete with the highest examples of the Georgian period in England and the Colonial in America, and that convenience, spaciousness, and simplicity are of more importance than pretty effects. From the monumental architecture of France and America you will deduce opinions concerning similar work in the British Empire. The whole of my remarks can be summed up in this quotation from one of Professor Cockerell's Academy lectures, given in the "forties":

The studies of the beauties and defects of celebrated buildings should be the aim of the scholarly architect: this was the continuation of theory and led to that knowledge of form and combination which makes the accomplished architect. The importance of this confirmation of theory was admitted by every practical architect. No man invented an order or a series of mouldings: these he accepts from the greatest and most reputed masters' works who have preceded him; he stores designs, books, and portfolios, and prides himself, like the lawyers, on his precedents and authorities. Absolute invention he never proposes to himself for a moment, but by a large study of history and examples he is enabled to detect the petty prejudices of schools, to emancipate himself from the trammels of nationality and fashion, and to regard the works of all times and countries as subject to his own use so far as they may be conformable to strength, convenience, and beauty.

I am not a prophet or a magician, and I cannot lift the veil to show future architecture. I am, nevertheless, firmly assured that the buildings I intend to bring before you to-night contain the secret of the future.

The lecturer then exhibited and gave a running commentary and incisive criticism upon the principal Classic buildings of the 18th and early 19th centuries in England, the United States, and France, closing with a theatre in Naples, these being shown as lantern-slides on the screen.

Sir John J. Burnet, R.S.A., in proposing a vote of thanks to the lecturer, observed that they had been charmed with his diction and his illuminating cursory observations on the slides shown; but he seemed to have been more severe on contemporary English work than was quite prudent. He had illustrated in his address and the accompanying views the theory that architecture, no matter in what character or at what time it was practised, achieved its greatest successes when it was the expression of the application of a cultured mind to the elucidation of the problems of the moment. They had seen that an engineer, a lawyer, or a carpenter who applied himself sensibly and intelligently to meet the requirements of the building demanded evolved in each age an edifice which was pronounced a successful architectural work, which stood the test of time. In recent years he had too often heard the admonition to students that drawing should be the first consideration; but there was a grave risk that while the designer applied himself to skilful draughtsmanship he might neglect that of producing good architecture, and exclude him. Our public buildings were too much illustrations in actual materials of the original drawings. The architect must become master of the craft of architecture; it would take him years to cultivate his powers as an artist, and he would not go a better way to work than to follow Mr

Richardson's suggestion and contemplate, compare, and criticise the masterpieces of the past. Like the young painter, the architectural student should aim at understanding the spirit which animated the great works of other generations, rather than the mere details, and should then seek to apply that spirit to the everyday problems of the work which came before him. Style, and not the Styles, should be the purpose of his study. The teacher would best help the architectural student by putting fine things before him and urging him to develop his own reasoning and analytical powers. The student must have an intimate knowledge of construction and of sanitary requirements; but he need not be, and he could not be, a skilled craftsman. There is too much for the architect to learn in his profession to allow him to pose as a master of every craft; but an intimate knowledge of construction will enable him to select his craftsmen, to develop in the material the inward thought which animates the design. If this were done we should see triumphs of design put into execution never yet rivalled. At no time was the architect better able to indicate what he wanted, and at no time were men more ready to execute his wishes, and it lay with the architect to initiate great schemes for future works.

Mr. Arthur Stratton seconded the motion. Mr. Richardson's address had been elucidative, suggestive, inspiring; but they lost sight of certain aspects of construction which ever governed architecture. He had denounced the fetish of craftsmanship; but his examples held up for admiration were the works of giants in design, and not all architects were giants. It was well that they should have high ideals of Classic design set before them. He had praised the 18th-century English tradition, as developed by American architects in their so-called Colonial style; but there was no reason why our architects should not develop the tradition of Wood of Bath in our own national way. We do not want a cosmopolitan treatment of design.

Mr. Ronald P. Jones said the development of American architecture did not result so much from a study of Colonial work as from efforts to respond to the public demand. There was an intense interest taken in architecture by laymen in the United States, as shown by the purchase of architectural books and journals and a willingness to discuss questions of style which was not paralleled in this country. This created a civic pride in, and a desire for, monumental buildings in the city halls, libraries, museums, and even the railway stations, as, for example, in the palatial treatment of the Pennsylvania Railway terminus in New York.

The Acting President, in putting the vote of thanks, which was carried by acclamation, remarked that an outstanding point in the excellent paper read by one whose works and books they all knew and admired, was the difference between loose and trained individuality. It was necessary, as Sir John Burnet had said, for the architect to bring a cultured mind to bear on the problems of the day; but Mr. Ronald Jones had further suggested that it needed a cultured public to demand vigorous architecture. Perhaps it lay with the Royal Institute of British Architects to influence, stimulate, and educate the public, and with the Association to train young men to produce work of the highest class.

In his brief reply, Mr. Richardson said English architecture was so strong and virile that it would never be submerged by cosmopolitanism. The Association was doing admirable work in the training of young architects, under the able tuition of Mr. Atkinson as master.

The town council of Kidderminster have after much discussion, decided to carry out a scheme of road making in the areas recently added to the borough, at an estimated cost of £12,000.

The urban district council of Leek have received the sanction of the Local Government Board to loans of £1,030 for the purchase of land for extension of gasworks, £2,455 for the construction of new streets, £410 for the purchase of land for allotment purposes, and £3,660 for the laying out of Brough Park.

THE REPORT OF THE LAND INQUIRY COMMITTEE: RATING.*

By E. H. N. RYDE (Professional Associate).

The present system of rating is based on the annual value of land and buildings in their existing condition and as put to their actual use; or, to use an oft-quoted phrase, "Rebus sic stantibus." This principle was established by the Statute 43 Eliz. c. 2, commonly referred to as the Statute of Elizabeth. It is unnecessary for me to labour the history of the system to-night, but the greater part of the first eight chapters of Part IV. of the Committee's Report criticises that principle. In my opinion, however, the principle is the fairest, although I do not think it is perfect. On reading the Report, one is led to ask the question: Does the Committee agree that the principle of ability to pay should govern the amount of a man's local taxes? I feel quite sure that, even if the present system fails, occasionally, in this respect, the basis afforded by the capital value of property for any purpose would fail to a far greater extent. The principle involved in the taxation of site values is fundamentally different to the old system of annual value. I have read the Report, and I do not think that the Committee recommends taxes on site value as a substitution for rates on annual value, because it thinks that the principle of ability to pay should be adhered to. A different reason is urged for these taxes: "the aim of rating site values is to achieve a certain economic result—namely, the putting of land to a better use." But I do not think that taxes should be imposed for this object, however praiseworthy such an object may appear to be on paper, if, in attaining it, large classes of property owners are going to be unjustly penalised. For (again quoting the Report) "We have to consider the problem from the point of view of an old community, where a different kind of rating system has been in existence for centuries, and where land has been bought and sold for generations upon the assumption that rating was to be based upon the composite hereditament, and not upon the site value." This difficulty lies at the root of any proposal to alter our rating system, and it is a very serious one. Land may be divided into three classes—namely:

- (A) Fully developed;
- (B) Under-developed; and
- (C) Undeveloped.

In Class (A), where land is fully developed, the capital value is merely the capitalised equivalent of the annual value. Rating on capital value or on annual value would give the same result, and, therefore, the proposed change is not needed, as the object aimed at and described above is already achieved. If the site-value tax were likened unto a medicine for the cure of a definite ill, to apply that tax to this class of land would be similar to giving the medicine to a person who has long since recovered from the illness which the medicine is intended to cure. Turning to land included in Classes (B) and (C), I think a great deal of hardship will be suffered, and I should like you to consider briefly certain actual cases. I think that such a city as Oxford provided a suitable example. There the district valuer has had to assume that the buildings, etc., of each particular college (in turn) are removed, and that the other colleges—the University and the City—would remain as they now stand. A very large number of these sites are inalienable, because they have been granted by ancient charters which have made them so. The words "pro ipsorum mora et inhabitatione in perpetuum" occur in one which I have recently seen, and the warden and scholars and their successors of that college are to hold that land for their own dwelling and habitation for ever. In addition to this disability to part with the sites, the value of the individual sites, for purposes other than those to which they are devoted, is often very greatly in excess of the value for the particular purposes to which they have to be

put. This has been admitted by everybody who has ever had anything to do with local assessments in Oxford and Cambridge, including the late Recorder of Oxford (the Right Hon. Alfred Lyttelton), and the present Recorder of Cambridge (Mr. J. F. P. Rawlinson). But, for the reason given above, the colleges cannot realise that additional value. Apart, too, from the question of the inalienability of the site, the additional value could only be realised by the demolition of some of the most historically renowned and beautiful buildings in England. Again, some of the wealthiest colleges possess the least valuable sites, and the poorest college possesses one of the most valuable; so that I have arrived at the conclusion that, for this class of under-developed land there is no equity in the punitive taxes proposed by the Committee. There is another case of under-developed land which I will quote, because I think it is one of a numerous class. There is a modern private dwelling-house named "Belmont," situated between Wimbledon and Putney, facing one of the prettiest parts of Wimbledon Common. The house, with about five acres of land, was assessed at £836 rateable value. The cost of erecting the house was between £19,000 and £20,000. The property came on to the market, and subsequently the assessment was the subject of an appeal to Quarter Sessions, when the appellant was proved to have given, about two years before the date of the appeal, £17,500 for the house and 11 acres of land, after an unsuccessful attempt had been made to dispose of the property at auction. At the hearing of the appeal the respondent rating authority contended that two acres of land should be included in the assessment of the mansion, as being necessary for it, and the capital value which they assigned thereto was £3,000. Now, it seems to me that this is another case where the object of the site-value tax could not be achieved without a sacrifice of capital out of all proportion to the possible realisable value of the land. Assuming that the £3,000 claimed by the rating authority fairly represented the value of the two acres of land which it was contended were appurtenant to the mansion, it is probable that the extreme value of the back land was £400 per acre, or £3,600 for the 9 acres, so that there would be left a figure of £10,900 upon the mansion itself, which, be it remembered, had cost £19,000 to £20,000 to erect. In other words, if the tax on the site value of the land ever compelled the owner of "Belmont" to put the land to a better use, it could only be done by sacrificing the larger part of the capital sunk in the house. With regard to undeveloped land, I do not think I can do better than refer to a part of the evidence given by Mr. Potts before the Select Committee of the House of Commons on Town Holdings in 1890. I think it is typical of very many cases which will occur to your minds. Mr. Potts said: "I have an instance here arising out of my own experience, and I do not think this is a singular instance at all. Twenty-two years ago I bought, well within the confines of Sunderland, eight acres of land. It was actually within the town. It was property which had been held up by a Chancery suit for a great number of years. When it at last came before the public I bought it. It was laid out for building purposes, and at first it went off remarkably well. We sold two-thirds of the land at a very fair price, and in a comparatively short space of time. There then intervened an excessive depreciation of trade, and trade and building completely stopped upon this land. One third of the land is now vacant. It has remained vacant and useless, producing no rent, ever since that time, notwithstanding the fact that the roads are to some extent made upon it, and that to some extent sewers are put in. When the revival took place afterwards, if I may so express it, the tide had passed over this particular part of the town. They were building on a circle beyond it, and I have had no inquiries for that land. It is lying there waste and vacant to-day, and I am very much afraid that it will lie waste and vacant for a large number of years. I cannot compel people to

* Read at the Ordinary General Meeting of the Surveyors' Institution, held on Monday, February 22, 1915. Another paper was read by Mr. Isaac Dixon, F.S.I., which we shall give next week.

buy it. There is no man comes and says, 'You sold this portion for sixpence a yard, will you take threepence a yard for that?' I have never had such an inquiry. I think, broadly, the delights of building land owning are greatly exaggerated."

Q.: "Supposing building land had been rated during those years, what would have been the result in that case?"—A.: "Then my loss must have been greater by the amount of those rates, surely. I am bound to make a heavy loss upon that part of the estate. If I had been paying rates all that time, that loss must have been greater."

Here was a case of so-called dormant building-land well inside a town. The Report dwells at some length also upon the subject of undeveloped land on the fringe of towns. It is argued that the owners of such land should be rated upon its capital value, the moment such value increases above the value of the land for agricultural purposes. But it should be remembered that, if land at present used for agricultural purposes only has a value beyond agricultural value, but is not ripe for building, the added value represents the price which a purchaser would pay to-day for the chance of getting the building value in the future. If the purchaser were under contract to build immediately, the added value would either disappear or would be largely reduced. If expectations are realised the added values will be taxed when they come into being. If they are never to be realised, to tax the expectation would involve gross injustice. The Report admits that, in dealing with railways, "no practical method of ascertaining the additional value due to the monopoly privilege has, so far as we are aware, yet been devised, nor are we in a position to devise one. We think that the subject should be investigated by an official inquiry. Meanwhile, until a satisfactory method has been devised we would suggest that railways should continue to be rated on the basis laid down by the existing law." I do not see why railways should be treated on a different basis to other classes of property. If, in valuing land occupied by railways, anything is included for monopoly value—whatever that may be—then the improvement is being rated. I cannot see that land carrying a railway possesses any greater monopoly value than does land which is in a neighbourhood possessing any special advantages for house property. Before I leave the broad principles of the taxation of capital site values, I should like to point out that it seems to me to proceed on the exactly opposite basis to that of ability to pay. Under the present system, for example, such concerns as tramways, gas companies, water companies, electric light and power companies, hydraulic-power companies, etc., pay rates for the rails, mains, etc., which they possess under, on, or over the roads and streets. The Committee has been obliged to admit that it cannot say how the site value of land occupied by railways is to be arrived at, but why has no mention at all been made anywhere of the subject of the assessment of land occupied by these rails, mains, etc.? Being situated in or upon the public highways, such properties occupy land which cannot be assessed to the site-value tax, and, therefore, under this method of rating a very large and important portion of these valuable concerns would, in my humble opinion, escape altogether. Having made these preliminary observations on the cause for the inquiry, the present rating system, and the proposed new principle of taxing site values, I will endeavour to discuss, in turn, the various recommendations which are made by the Committee. They will be found printed in small type, with their numbers attached. Taking first the basis of assessment, the initial recommendation is to the effect that—

1. All future increases in local expenditure that are chargeable on the rates should be met by a rate upon site values. In other words, every local authority should be required to raise, by a rate on site values, the whole amount by which its expenditure out of the rates in any future year exceeds its expenditure in the year immediately preceding that in which this proposal comes into force.

The immediate object is to relieve improvements as such. It is probable, how-

ever, that the recommendation is made also with the indirect object of altering the incidence of future rates, so that, if possible, the burden may be placed eventually on to the owners of the land. Therefore I think this should be considered in connection with the fifth recommendation—

5. The site value rate should ultimately be levied upon owners, but existing contracts should be respected. Where an occupier has contracted before the introduction of the new system to pay all tenant's rates, no rates should be levied upon the owner until the expiration of such contract. A contract should, of course, be held for this purpose to expire at the first time when the occupier is entitled, after giving due notice, to determine it.

In order to appreciate what the effect of these two recommendations would be, I am going to assume two hypothetical cases.

(A) First, for example, take the case of a well laid out and developed town. Let it be assumed that these recommendations have been carried out, and that some land on the fringe of the town has been developed by the erection of model dwellings. This development commenced when these recommendations came into force, and the "increase in the local expenditure chargeable on the rates" attributable thereto, comprises chiefly—

- (1) The education of the children living on the estate
- (2) The extra road maintenance, and lighting;
- (3) The cost of drainage and sewage-disposal.

I have no doubt that under these proposals, although the recommendation does not make it very clear, every house on this new estate would be rated on its annual value. But evidently the whole of the increase in the local expenditure would be met by a rate on the site values of (presumably) the whole of the town. The occupiers in the town who paid rates on the annual value of their composite hereditaments would pay slightly less rates after the new model dwellings were brought into rating, because the total number and value of hereditaments had been increased. For it must be remembered that there would be a fixed high-water mark represented by the total "expenditure in the year immediately preceding that in which this proposal comes into force." But I do not see any reasonable grounds for saddling the whole of this extra burden, attributable to the development of this estate, on to the backs of the landowners in the town. The value of their land may have been actually decreased by the improvement. And of what benefit would these new roads and sewers be to them? It seems to me that these expenses would all be more proper subjects of taxation for the occupiers than for the owners. And, be it remembered, the owners of the land are already contributing indirectly in the rest of the town towards the cost of education, maintenance, and lighting of roads, sewerage, poor relief, vaccination, registration of births, marriages, and deaths, preparation of Parliamentary voters' and jury lists, public baths, free libraries, etc., all of which, in my opinion, benefit the occupiers to a greater extent than they do the owners. Yet it is suggested that the latter should pay in addition the whole of these expenses for the suburb. I think that the landowners should contribute towards these expenses, but I do not think they should be expected to pay the whole of them. Whatever rate is made in the year after the recommendation came into force would be merely a "rate in embryo," which would be certain to grow.

(B) Secondly, take the case of two towns and compare the following hypothetical circumstances. At the time these recommendations came into force both these towns raise £100,000 annually in rates. Subsequently one of the towns develops considerably and the local expenditure is doubled, while the other town remains stationary and its expenditure unchanged. The occupiers in the town which doubled would only have to pay one-half of their local expenditure (the balance being charged upon the landowners), and the occupiers in the town which remained stationary would pay the whole. How could this be right? If these two towns were anywhere within hail of one another, I should say that there would be a veritable exodus from the one which does not develop to the one which does. And if this exodus took place, and half the popu-

lation of the town which did not develop left it, the rates in the town which did not develop would inevitably rise because of the empty houses, while the rateable values would fall. The total expenditure out of the rates would not decrease in proportion to the number of occupied houses.

2. Assuming that the subventions paid out of imperial taxation in aid of rates are substantially increased, existing expenditure should be met in part by a penny rate on capital value.

Again, the desire to make the landowner pay a greater share of the local expenses is evident in this recommendation. The words "substantially increased" are vague, but the following extract from page 628 of the Report is worth remembering: "If we take the basis suggested by the Royal Commission in 1901, and allow for the growth of expenditure since that time, it seems fairly safe to assume that the total relief thus given could not well amount to less than £5,000,000." The reason why this extra grant to local authorities should form the occasion for another penny-worth of site-value tax on the owners appears to be that, in the opinion of the Land Inquiry Committee, the granting of that extra amount will be a direct relief to the owners of ground values. I do not think that it is necessary for me to go into this question. All I will say is that, if the landowners are relieved by the granting of these extra subventions, so are the occupiers, and I do not understand why the relief given to the owners should be obliterated by this additional owners' tax.

3. On the same assumption, local authorities should be given the option of raising by a rate upon site values such further part of their expenditure from rates as they think fit.

I think this recommendation most unwise. It would almost inevitably lead to wire-pulling and injustice. In districts where the landowners are non-resident and are unable to protect themselves by any share in the management of local affairs, as much as possible of the local expenditure would be crowded on to the value of the land. That might easily lead to the income from the land being swallowed up by extra taxation. I believe the greater part of Eastbourne belongs to two landowners. The town owes a great deal to the manner in which these two estates have been managed. Yet this recommendation would place the income of these estates in the hands of the local rating authority, a body whose composition is continuously changing. Parliament should surely ascertain, definitely, what is the fairest basis of taxation for the whole country, and then direct the local authorities to levy the tax on this basis.

4. The remainder of expenditure out of the rates should be raised, as now, by a rate upon the composite hereditament.

I think that this mixing up of the two systems would lead to wastage, extra cost of collection, and general confusion.

6. Provision shall be made to secure that no additional burdens are imposed upon agricultural land as a whole. With this object in view, it would be well to assess agricultural land, both to the new site rate and to such rates as are still imposed upon the composite value, on a part only of its full value. How large the part should be cannot be determined till further data are available. It should be such that agricultural land as a whole would not pay more under the new system of rating than it would have done under the old one.

From the wording of this recommendation it would appear that the Committee is of opinion that the Agricultural Rates Act, 1896, affected the principles of the valuation of agricultural land. But the partial exemption given by that Act to agricultural land is effected by halving the rate, not by altering the rateable value. It is interesting to remember the violent opposition which was offered to the passing of that Act. Indeed, the Report alludes to the matter as follows: "It is probable that a large part of the burden of agricultural rates is really borne, not by the farmer, but by the landowner, and it was this fact which led to the outcry against the Agricultural Rates Act, 1896." The Committee's proposal is similar in effect to that contained in the Agricultural Rates Act, 1896, and the object of it is to secure the relief afforded by that Act. An adjustment of the exemption of one-half of the rates as calculated on the annual value of agricultural land would have to be made in

order to balance the additional rate on the site value. Since it is proposed that the total burden imposed by the two methods of taxation should not exceed the total burden at present imposed by the one, it seems to me to be a waste of labour and expense to alter the existing machinery. (I have not overlooked the theory involved as to the presumed transfer of the incidence of rating, which, however, I do not think is concerned at this point.) I believe the Committee has misunderstood the present law on the subject, and I think the following sentence, which is to be found on page 543 of the Report, illustrates the kind of mistaken views which it holds: "We have come across a great many instances of good land, heavily overstocked with game, especially pheasants, which is, in consequence, let to the farmer at a considerably lower rent than it would have been otherwise. This land is rated at its value as diminished by the presence of game, with the result that other farm land has to bear a higher burden. It is claimed that such land should be rated, not at its reduced value, but at the value which it would have if the land were put to its best use." But this is the very class of land which Section 6 of the Rating Act, 1874, was specially designed to deal with. The Committee has overlooked that section, which directs that, where any right of sporting is "severed from the occupation of the land" and is not let (as in the case where the landlord reserves it to himself), the occupier is to be rated for the full value of the land, including the right of sporting; but he may deduct from his rent the rates paid in respect of the increase, if any, of his assessment on account of the value of the right of sporting being rated. It is probable that, in most cases, the reduced value of the land plus the value of the sporting rights would give at least a figure approximating to the value which the land would possess if put to its best agricultural use.

7. Some alternative suggestions for the rating of site values, which the Committee do not adopt, but which they think worthy of further investigation, are contained in Appendix B.

As the Committee has not adopted these suggestions, I do not think they as yet come within the sphere of practical politics, and I do not, therefore, feel that it falls within the scope of this paper to criticise them. Recommendations 8, 9, 10, and 11 are headed "Relation between Imperial and Local Taxation," and deal with the proposed extra subventions, amounting to £5,000,000, and how they should be distributed. I think the amount mentioned is too little. So many of the expenses which are now met by local taxation are essentially national in their objects that it seems to me to be a subject for further careful consideration as to whether the land does not already bear too great a share of taxation. I do not think this large subject can be included in this paper. The recommendations now turn to the method of valuation, the first under this head being

12. The proposal of the Royal Commission on local taxation to the effect that in each administrative county there should be only one valuation authority, that it should be appointed by the county or county borough council, and that the valuation lists drawn up by it should be the basis of all rates and taxes levied on the composite value, should be adopted, subject, however, to the modification that separate valuation authorities should be created for at least the larger non-county boroughs.

I think the existing area should be maintained as far as possible; but it might be advisable to give powers to county authorities to enlarge areas where they think such a course advisable. I quite agree with the proposal to make one set of valuation lists the basis of all rates and taxes (poor rate, county rate, general district or special expenses rate, Schedule A, Schedule B, etc.) I cannot, however, agree with the conclusions of the Committee as to the way in which assessment committees and overseers do their work, and I consider that the principle of taking evidence and publishing parts only of such evidence, without giving the name of the witness, is objectionable. The charge of partiality which has been made anonymously is, in my opinion, unwarranted, and can carry

no weight unless the persons who make such accusations come out into the open and enable their statements to be sifted and criticised. Even the existing machinery, without any amendment, offers a number of legitimate remedies for grievances having any foundation, and in the absence of an effective examination into their statements, it would seem quite possible that these anonymous witnesses might be actuated by personal feeling against the overseers and assessment committees, possibly even due to their having suffered financially through their assessments having been properly dealt with. I have seen a great deal of the manner in which assessment committees and overseers do their work, and I have generally found that they possess most intimate and extraordinary knowledge of the property in their parishes, many of the gentlemen concerned having lived in the district all their lives. It is to be noted that the charges are almost wholly directed against overseers and assessment committees in rural districts. Most towns of any size possess rating departments which are managed by surveyors, and nearly all unions regularly utilise the services of qualified rating surveyors for the valuation of difficult properties in their areas.

13. The law should require every property to be revalued at least once in every five years, and, if practicable, annually.

I do not think that it would be practicable to revalue every hereditament every year, but I think that a quinquennial revaluation should be required by law. In order, however, to reduce the expense of such revaluation, the whole of England and Wales should not, in my opinion, be revalued at once. If the country were divided into five parts, so that one-fifth could be valued each year, I think the expense of the operation would be considerably reduced, and the result would be more efficiently and carefully attained.

14. The district valuer should be *ex officio* entitled to attend the meetings of the County Valuation Authority, and should have power to appeal against the valuation list of any parish, or the valuation of any property in it. He should probably also be given the duty of preparing the valuation list.

This recommendation is not an easy one for any surveyor in private practice to discuss in the presence, possibly, of district valuers. But I am sure that I shall be acquitted of any desire to offend when I say that I can see no reason for transferring the work of preparing the valuation lists from those who do it now. Owing to the difference in principles, which I have tried to illustrate, between the present rating system and the system adopted for the Finance (1909-10) Act, 1910, the valuations made by the district valuers are made on a basis which would be wrong and misleading for the purpose of parochial assessments. Therefore, I should say, let the overseers, assistant overseers, or regular professional rating surveyors of the particular authority, as the case may be, prepare the lists.

15. Appeals to Special and Quarter Sessions should be abolished, and an appeal to the proposed Judicial Land Commissioners substituted for them.

With the first part of this recommendation I agree, but I do not think that the proposed Judicial Land Commissioners should be substituted. The tribunal which I favour is the one which was suggested as long ago as 1861 by the late Mr. Edward Ryde, and referred to by him in this room twenty years later, in his Presidential address—namely, a Court consisting of two surveyors and a barrister.

16. Railways and other special properties (such as canals, mines, tramways, docks, telephones, and gas, water and electric light works) should be valued by an independent assessor.

On page 672 of the Report the proposed assessor is spoken of as being appointed by the Government. This proposal is, of course, a serious attack on local control in the valuation of special properties. The examples mentioned in the recommendations do not include a large number of properties which rating surveyors would term "special properties," so that the amount of the control which is to be taken out of the hands of the

local authorities cannot be correctly gauged by the words of the recommendation without further knowledge. It is the invariable practice of rating authorities, not possessing permanent qualified valuers resident in the district, to employ rating surveyors for this class of work, so that I do not think it can be said that the work is not done by experienced valuers at present. In many cases special properties have been valued by the same firms in various parts of the country for many years, by more than one generation in some cases. The experience and the value of these old connections would, of course, be swept away by the appointment of the Government assessor. Apart altogether from the personal experience, the papers alone, in these exhaustive inquiries, are very valuable. I have had the opportunity of judging the relationship existing between the representatives of all classes of special properties and the representatives of rating authorities, and I think that it would be a misfortune to everyone concerned to disturb the existing conditions. The moment the assessor took over the rating of these concerns there would be, I believe, an immense increase in the number of objections and appeals. I think that the Union Assessment Committees are in many cases inclined to have peace at any price in the matter of rating appeals. And I think this is erring on the right side, for, in the high figures involved in these special valuations, there is often a certain margin between the estimates of the two parties within which the true rateable value may be said to lie. The knowledge that the losing side would have to pay taxed costs often stops appeals and conduces to a settlement. On the other hand, if the assessment is to be made by a Government assessor on behalf of the Union Assessment Committee, the Government in whose service he is would probably have to pay the taxed costs of the appeal, so that the Assessment Committee, being relieved of any financial liability, would be inclined to stand out for high assessments and thus encourage litigation. The value arrived at by the Government assessor might frequently be lower than that which the local authority's valuer would have estimated the property to be worth. Matters so serious to local authorities as these, involving the payments of very considerable sums of money, which, in many cases, form a large proportion of the total rateable value of the whole rating area, thus affecting the rates in the £, would be proper subject for local investigation. And I think it likely that differences of opinion would arise between the local authorities and their valuers, with their superior local experience and knowledge of the past history of the subject-matter in dispute, and the Government assessor.

17. Some tentative suggestions are made for the reform of the compounding system.

Time does not permit me to go into these suggestions in detail, but I think they are advisable. I agree that the present law as to compounding needs consolidation. Speaking generally, I think that land is being made the subject of too large an amount of taxation. With regard to the extra cost of maintenance of main roads, I think that, to make "the punishment fit the crime," heavy motor traffic should be taxed much more heavily than it is, and that the proceeds from such taxes should go towards the cost of repairing the roads. For this traffic not only wears out the roads, but the assessments of railways and tramways are reduced in consequence of the loss of receipts which is due to this new method of locomotion, and the local authorities are unable to obtain a compensating advantage by rating the competitor. Further, tramways have to maintain the space between the rails and on each side thereof, which this very heavy motor traffic helps to wear out. I think that all Government property should be rated on the same lines as other classes of property, and if this change in the law is made, Government property must be valued by the local authority's valuer, and not by the nominee of the Government, without appeal, as it is at present.

ATTENDANCE ON SUB-CONTRACTORS.

The Council of the Surveyors' Institution, in a recent letter to the Council of the Society of Architects, covering a memorandum on this subject, stated that a deputation from the Institute of Builders, received by the Quantity Surveyors' Committee of the Institution, drew special attention to the obstacle against accurate estimating imposed by the practice of leaving, in bills of quantities, the cutting away and attendance on sub-contractors to be priced in a lump sum by the principal contractor. In modern buildings the hot-water work, sanitary work, and electric wiring is usually considerable, often, indeed, very extensive, and this class of work, too, is frequently delayed until the building is in an advanced stage, necessitating a good deal of work which might be avoided were the requirements known earlier.

Accurate estimating is to the advantage equally of the building owner and of the contractor, and the Council of the Surveyors' Institution feel sure that anything which can be done to secure an improvement in that respect will receive the ready support of architects.

The Quantity Surveyors' Committee are satisfied that the builders are not without some ground for complaint, and that the importance of dealing in adequate detail with "attendances" is not fully realised by all who practise as quantity surveyors.

They are of opinion that the matter should be dealt with more precisely than is frequently the case in preparing bills of quantities, in order to obviate the friction which often arises between the parties to a contract, owing to a misunderstanding as to the liabilities imposed respectively upon the building owner, the general contractor, and the sub-contractor. The following notes and suggestions are therefore recommended for the consideration of members of the Institution. The word "attendance" does not comprise any works of construction (e.g., pipe trenches, castings, etc.), but it does comprise all cutting away and making good after, receiving materials, and providing storage space for them, providing water, allowing the use of erected scaffolding, and fixed plant. If so provided in the contract, it should also be taken to cover the payment of accounts as certified by the architect, before their inclusion in the general certificates. The particular matters dealt with by the builders' deputation were:

- (i.) Attendance on heating engineers;
- (ii.) Attendance upon hot water engineers;
- (iii.) Attendance upon electricians.

In dealing with attendance on these or other special tradesmen, there should be given an account, as detailed, clear and succinct as possible, of the work which it is proposed the sub-contractor shall do, stating precisely what services will have to be rendered to him.

When the sub-contract is of minor importance all the needs of the case will be met by leaving the estimator, after inspecting the drawings, to assess the value of the work to be done in this connection, and set it down against the descriptive item.

When the sub-contract is important, the same account of the work to be done should be given, and, in addition, an indication of the extent of the attendance, stating:—

- (a) The number of holes for pipes, &c.;
- (b) The number of pipe brackets, &c., to be fixed;
- (c) The clauses for pipes, &c.;
- (d) The number of the points for electric lighting, electric bells, radiators, sanitary fittings, &c.

A general item to the following effect should also be inserted:—

In so far as is possible, an indication has been given of the specific attendance required; but the contractor is to allow here for any further expense entailed in waiting upon special tradesmen, or for the disturbance of his work caused by them, and for giving them all facilities for the execution of their work.

Care should be taken that the nature of the attendance which will be afforded them is clearly set out in the sub-contractors' contracts.

It is considered inadvisable in ordinary circumstances to make money provisions to be expended in "day-work."

The Council of the Society, after careful

consideration of the memorandum, found themselves able to approve in principle the recommendations of the Surveyors' Institution, but made suggestions for alterations in detail, more particularly in regard to descriptive items, summarised in the cases of sub-contracts of minor importance, and set out in full on works of importance.

They also suggested the following additional clause:—

The words "attended upon" or "attendance" do not comprise any works of construction (e.g., pipe trenches, castings, &c.), but they do comprise all cutting away and making good after receiving materials and providing storage space for them, providing water, and allowing the use of erected scaffolding and fixed plant. Where the sub-contractor does not allow in his tender for any special scaffolding that may be required in connection with his work, the general contractor must provide it. The words "attend upon" or "attendance" must also be taken (if so provided in the contract) to cover the payment of accounts as certified by the architect, before their inclusion in the general contractor's certificates.

The Council of the Surveyors' Institution agreed that the verbal alteration suggested would be an improvement. But with respect to the provision of special scaffolding they considered that this could not be taken as included in the general term "attendance," and should be the subject of a separate item.

On further consideration, the Council of the Society agreed to this, and subsequently the Council of the Surveyors' Institution, in thanking the Council of the Society for the interest they had shown in the matter, intimated that their committee would take advantage of the suggestion made by the Society, when reissuing the circular on attendances on sub-contractors.

Meanwhile, they express a hope that the members of the Society of Architects may support the Quantity Surveyors in carrying out the principles embodied in the memorandum.

LONDON COUNTY COUNCIL.

At their meeting on Tuesday the London County Council adopted a recommendation from their Parliamentary Committee to yield to the pressure of the Metropolitan borough councils and withdraw the proposals contained in Part III. (Drainage of Premises), and Part IV. (Buildings on Low-lying Land) of the General Powers Bill. Opposition had been threatened by practically all the borough councils, and also by the Royal Institute of British Architects. The Parliamentary Committee referred to the statement made recently by the Prime Minister that "If private Bills raised questions of a public character and a contentious nature, the Government would naturally feel disposed to prevent further progress."

The Improvements Committee recommended the Council to erect a coroner's court adjoining the public mortuary in York-road, Wandsworth, on surplus land in the possession of the Council.

The Council was recommended to accept an offer made by the Committee of Lloyd's to present to the Council a marble statue, by John Gibson, of the Right. Hon. William Huskisson which was presented to the committee by Mr. Huskisson's widow in 1845. It is proposed to place the statue in Pimlico Garden, Grosvenor-road. The recommendation was approved by Mr. St. John Hutchinson, Mr. Shearman, Sir George Goldie, and others, on the ground that Huskisson had but a slight connection with London, while Mr. Cotton suggested that the statue should be given "decent shelter" in the new County Hall, and Mr. Burton urged that it should find a resting-place on the Embankment. On putting the report to the vote, however, the recommendations of the Committee were adopted by a large majority.

It was recommended that the freehold interest in a site at the junction of Mare-street, Hackney, and London-lane, having an area of about 5,000 square feet, be sold to the Commissioners of H.M. Works for £1,875 as a site for a labour exchange.

It was agreed, on the recommendation of the Housing of the Working Classes Committee, to deal with the Brady-street area in Bethnal Green by two distinct schemes, under Part 2 of the Housing of the Working

Classes Act, and an estimate of £53,000 on capital account was approved in respect of the first of these schemes, which will involve the clearance of over two acres and the displacement of 1,121 persons of the working class. This action has been forced upon the Council by an Order of the Local Government Board; and the chairman of the committee, Mr. Bernard Holland, complained that that body had adopted a dictatorial attitude without giving reasons. While the Board were no doubt within their rights, they could only compel the Council to take action by going to the Courts for a mandamus, which he did not think the Judges would grant, since the Council had not refused to carry out a scheme, but only decided to defer it. The committee, however, had come to the conclusion that it would be better to consent to carry out the Order, with the modification that part of it would be deferred, although he thought that in present circumstances it would be hard for the people to be turned out of their houses, bad as these might be.

A MOBILE HOSPITAL.

Specimen blocks of the mobile hospital which has been given by the merchants of Liverpool have been temporarily erected in the Children's Playground, Ullet-road, Liverpool. They will presently be sent to the front, where they will be utilised for the treatment of wounded soldiers of the Allies. The hospital is schemed to provide 200 beds, and in case of emergency 250 beds. It will be an absolutely self-contained institution, possessing all the features of a well-equipped permanent hospital; and the sections in which it is constructed are so arranged that they can be quickly erected, dismantled, packed, removed, and re-erected on fresh sites as the war develops. There will be eight pavilion wards, each to accommodate twenty-seven patients, and an operating block and kitchen block are situated centrally for the pavilions. The operating block will consist of X-ray room, with dark-room attached, anæsthetic-room, preparation-room, and operating-theatre, with dispensary, medical store, and splint-room, quartermaster's stores, and ambulance stores. Connected with the kitchen and operating block by a covered-in way are the nurses' block on one side and the orderlies' block on the other. Attached by a covered-in way is also the laundry, equipped with steam appliances. In this same block will be a coal and wood store, with stable, ambulance shed, and mortuary. An isolation block is provided with accommodation for four beds, and attached to it is the pathological laboratory. The whole of the hospital will be controlled from an administration block. All the buildings will be linked together by covered-in ways. A special bath block will be provided, having an undressing-room on the one side with soiled-clothes store, and a dressing-room on the other side with clean-clothes store attached. A plentiful supply of hot water will be on tap throughout the whole of the block.

The area taken up by the buildings alone will be nearly one acre, and the site required to accommodate the hospital will be four acres. The cost of the buildings amounts to £12,988, which is considerably more than the original estimated cost. The cost of equipping the hospital with bedsteads, bedding, clothing, enamelware, hardware, cutlery, medical and surgical equipment, X-ray apparatus, and necessary furniture, providing uniforms for staff, etc., amounts approximately to the sum of £6,000.

The partnership hitherto subsisting between G. Newton, M.S.A., and L. S. Youngman, M.S.A., carrying on business as Newton and Youngman, architects, at Delphi Chambers, Old Christchurch-road, Bournemouth, has been dissolved.

An office building which is being erected at the corner of Yonge and Albert streets, Toronto, at a cost of 100,000 dol., has reached the roofing stage. The architect is Mr. F. S. Mallory. The building is of brick and terracotta construction, and is six stories high.

Our Illustrations.

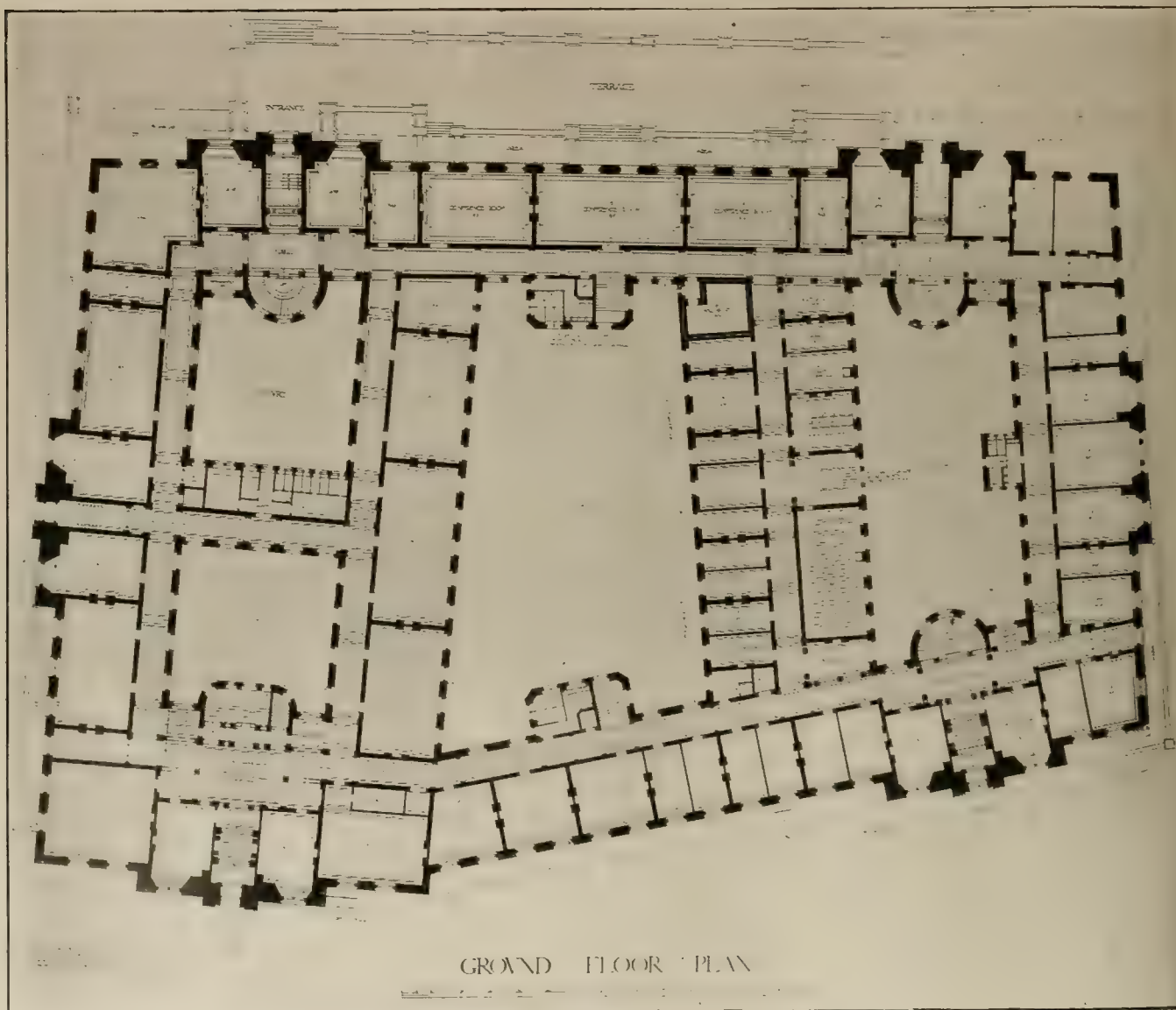
BOARD OF TRADE NEW OFFICES COMPETITION.

In our review on the 12th inst. we noted the most outstanding features of every one of the ten sets of the final plans, and each scheme was somewhat fully particularised in a comparative manner; consequently little remains to be added here by way of description of the pair of designs chosen for illustration to-day. The proposal of Messrs. Robert Atkinson and George Alexander is

would have had to radically redesign the layout of their scheme before Clause 15 could be complied with. Competitors who so far succeed as to be invited by the promoters to amplify their preliminary plans, after being chosen for the final contest, naturally enough presume, in complete good faith, that any wholesale changes in the disposition of their scheme already accorded such a preference must materially jeopardise the likelihood of ultimate election for the work. Irrelevant plans selected in this way are, therefore, from the outset obviously handicapped, though their authors, being in the dark as to their competitors'

reliable and ascertainable principle. We can only judge of the plans as we find them; with the result that the predicament appears inexplicable, and ought to have been avoided.

—Mr. C. T. Armstrong does not comply with Clause 14, because he has four courts instead of two, which afterwards was decided should be the maximum allowable. He does conform with Clause 15 by lighting the corridors as prescribed. The cross-corridors running east and west depend, however, in this plan upon light from the smaller pair of areas, or they have windows opening into the narrow way of the more restricted southern courtyard. Probably this amount



BOARD OF TRADE NEW OFFICES, THAMES EMBANKMENT, LONDON, S.W.
Ground Floor Design by Mr. C. T. ARMSTRONG, A.R.I.B.A., Architect.

represented by a perspective view and elevation of their Victoria Embankment front, with details of same to a good scale. The ground floor and principal plans are reproduced, as well as a longitudinal section. This scheme is admittedly based upon American lines, and the authors have closely adhered to their original lay-out, depending upon borrowed lights almost exclusively for the whole of their corridors. On the evidence of the sketch-plans of this design the umpires when making such a selection accepted responsibility for any dilemma due to this discrepancy between Clause 15 of the subsequent Conditions and the fundamental principle of Messrs. Atkinson and Alexander's arrangement, which made no pretence of lighting corridors, in the particular way specified later, except in so far as light more or less direct might come in incidentally at the immediate junctions of the passages from the corner-set stairway lobbies. The authors

schemes, are in the meantime precluded from ascertaining their own invidious position. The preparatory choice of any design so fundamentally at variance with a leading clause like No. 15 in this Board of Trade Offices Competition, is open to the further objection of necessarily excluding, in a most unfair way, some more applicable scheme from among the rejected competitors. In this instance there were some 177 architects relegated as unsuccessful, although we know of some among them who sent in excellent and very workable plans, having externally placed corridors schemed in unbroken lines, with plenty of windows opening into really ample light-areas, capable of insuring abundant direct light at proper angles to all floors. Such a specification cannot be said to apply to the major number of the proposals favoured by the judges. Surely it was an initial mistake not to have made the choice on some more

of light might, relatively speaking, suffice. We reproduce his two chief plans and the sheet of sections to elucidate these pertinent comments thereupon, and, besides, we illustrate both the east and west elevations of this design. Fireplaces are furnished as required by Clause No. 12, to all the minor rooms. Whether or no the type adopted by Mr. Armstrong in his planning belongs to the past generation, as some critics have alleged, is of small moment, and we have no wish to join in any such disparagement of a competitor's abilities. His well-considered elevations hold their own among the best of those lately on view in York House, Kingsway. The author steers clear of any attempt at forestalling the architectural aspirations of the Liverpool Futurists' school. Moreover, these balanced façades of his are unpretentious and nicely proportioned. We doubt if Mr. Armstrong's scheme could ever have been seriously entertained after the

decision was determined on to restrict the courts to a maximum of two. Unless he redesigned the entire lay-out in order to come into line with Clause No. 4, it must have been difficult to anticipate success without an undue reliance upon the fact that Clauses 15 and 12 were adhered to absolutely by his accompanying plans.

PAIR OF HOUSES, WEST AVENUE, EXETER.

This pair of suburban residences, of which we give plans and view, provide two parlours and six bedrooms each, two of the latter being on the second floor, where there is a good boxroom and tank-place. The illustrations are self-explanatory, so that little by way of description is needed. The staircases are lit from above, and the kitchens, with offices, are self-contained. The little verandah to the rear adds to the convenience of the drawing-room. The exterior walls are roughcast, with brick archways to the entrances and chimneys. The estate is in Cowley Bridge-road. The architects are Messrs. Ellis, Son, and Bowden, of Bedford Chambers, Exeter.

PROFESSIONAL AND TRADE SOCIETIES.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.—Mr. Edwin F. Reynolds lectured before this association on Friday night, at the Society of Artists' gallery, New-street, on "The Use of the Classical Order." Mr. Reynolds's treatment of his subject was mainly historical, and he dealt in order with the work of the Greeks and Romans and of the Renaissance. The lecture was illustrated by lantern-slides, and it was followed by a discussion, in which the application of the Classical Order to modern conditions was dwelt upon.

THE CISTERCIAN ABBEY OF TOWER HILL.—A paper on this subject was read before the Society of Antiquaries at their last meeting by Mr. A. W. Clapham. The abbey, that of St. Mary de Gratiis, was the last of the Cistercian foundations in England, and owed its origin to Edward III. in 1350. The house, which was originally established with five monks from Beaulieu Abbey, was poorly endowed at first, but its revenue at the close of the 14th century ranked third in value of English Cistercian abbeys. An early Stuart plan, preserved amongst the Domestic State Papers, enabled the main features of the building to be clearly identified, and some Late 14th-Century building accounts and the grant to Sir Arthur Darcy at the Dissolution in 1558 gave much additional information. Both the east and west ends of the building stood on open courts on the site of the present Royal Mint, for the erection of which the site was cleared in 1810. A year or two ago some Late 12th-Century stonework was discovered, but not in situ, and further excavation might profitably be undertaken.

CLERKS OF WORKS' ASSOCIATION DINNER.—The thirty-second annual dinner of the Incorporated Clerks of Works' Association was held at the King's Hall, Holborn Restaurant, on Saturday evening, the chair being occupied by Mr. Edward P. C. Monson, F.R.I.B.A., F.S.I., President of the Society of Architects, who was supported by Mr. Howard Chatfield Clarke, President of the Surveyors' Institution; Mr. H. Nield, K.C., M.P.; Lieut.-Col. A. C. Preston, Mr. F. C. Rice, President of the Institute of Builders; Mr. Percy B. Tubbs, F.R.I.B.A.; Mr. C. E. Wallis, President of the London Master Builders' Association; Mr. William Woodward, F.R.I.B.A. The toast of "The Healths of Architects and Surveyors," was proposed by Mr. Stevens, vice-president of the association, and was acknowledged by Mr. W. Woodward and Mr. H. Chatfield Clarke. Mr. J. R. Scales submitted "The Worshipful Company of Carpenters," which was responded to by Lieut.-Col. Preston. The toast of "The Builders" was proposed by Mr. J. W. Groom, responses being made by Mr. F. G. Rice and Mr. G. E. Wallis. In introducing the toast of the evening, "The

Incorporated Clerks of Works' Association," the Chairman remarked that he wished to speak of clerks of works as architects looked at them. They were jolly good fellows. They had to look after everybody; they had to see that the builders fulfilled their contracts as specified, that the architect's instructions were carried out, that the employer got value for his money, and that nothing wrong was done in any sort of way. The position of a clerk of works was one of great difficulty, and he did not think that the clerk of works was paid a sufficient wage. When they noticed public authorities offering clerks of works a sum of £2 10s. a week they felt that it was tempting the men to be dishonest. The sooner that state of things was rectified the better would it be, not only for the clerks of works, but for the building owners whom they were expected to protect. Recently the Council of the Society of Architects had received a deputation of clerks of works, who put this point before them. Their Council had decided to do all they could to increase the wage which that class of workman received. One of the great difficulties was having to look after the work of men who were not properly trained. He suggested that the trade-union should urge that unless a man had served an apprenticeship to his trade he was not worth so much money as the man who had obtained his articles. He knew the London County Council was establishing training schools; but a trade could only be properly learned in the workshop and on buildings. In order to continue its work of benevolence the Association needed subscriptions from outside sources; he himself would have pleasure in giving them ten guineas. The President of the Association, Mr. W. H. Hookham, responded in a brief speech. The concluding toast was "The Visitors," proposed by Mr. Joseph Davies and acknowledged by Mr. Nield, M.P., and "The Chairman," given by Mr. M. T. Reid, and received with musical honours.

MALINES AND ANTWERP.—A University Extension lecture on these cities was given by Mr. Allen S. Walker on Monday afternoon, at the Central Young Men's Christian Association, Tottenham Court-road. The city of Malines, said the lecturer, corresponded to our Canterbury, being the seat of the Belgian Archbishop. Both Malines and Canterbury were originally built within an oval figure, each defended by walls and gates. Malines Cathedral, however, had its lofty 15th-century tower at the western end, whereas Canterbury raised her great Bull Harry Tower (also of the 15th century) over the centre of the building. There could be no doubt that the English Cathedral had by far the most impressive exterior. The lecturer referred to the thrilling history of Antwerp, and the devastation which the army of Philip II. brought about, when the population sank from 200,000 to a quarter of that number. The stately city, with its seven-aisled Cathedral, formerly filled with priceless works of art, was suffering again as it had suffered before, just as it had begun to rise from the ruins of its earlier destruction.

R.I.B.A. EXAMINATIONS.—The Final Designs Approved.—The Board of Architectural Education announce that the designs submitted by the following students have been approved:—Subject XVIII.: (a) Design for an Organ-case in a Circular Hall—A. A. Foot, P. J. Gordon, V. Hull, W. G. Knight, J. Scott Lawson, T. A. Sanders, H. J. Tebbutt. (b) Design for a Group of Small Dwellings—W. J. Brown, H. W. Cash, E. W. Filkins, P. J. Gordon, R. B. Hall, W. Holden, R. Jackson, H. Z. Kassam, N. Keep, S. Knight, H. M. Luyken, E. Lyne, Jun., H. A. N. Medd, S. E. Minns, C. H. Mitchell, D. J. Moss, A. T. Philp, C. S. Picton, L. J. Routley, F. C. Saxon, M. B. Taylor, D. R. Thomas, P. Whitehead, F. Wilkinson. Designs for other subjects, from the following candidates, have also been approved:—C. O. Ap Gruffydd, H. N. Fisher, G. H. Gray, R. S. Moore, A. G. Wood.

THE TRIUMPHAL ARCHES OF ROME.—In his last lecture at the British Museum Mr. Banister F. Fletcher described

triumphal arches as the outcome of Roman love of ostentation and of a desire to impress conquered peoples with the military power of the Empire. Thus amphitheatres for amusement, thermæ for luxury, and triumphal arches for show depict the various sides of human weakness which were entered for by those in power. These arches were erected in various parts of the home country and in conquered provinces to celebrate the opening of a new road or seaport or the conquest of a new province. They reproduced in a permanent form in stone the arches, garlanded in evergreens, under which victorious generals passed in their quadriga into a captured town, and all the details of the processions along the Via Sacra at Rome, when the returning victors went up to offer sacrificial thanksgivings in the Temple of Jupiter on the Capitoline Hill. The Arch of Titus records the capture of Jerusalem, and the bas-reliefs set forth the seizure of the Golden Candlestick and the table of shew bread from the Holy of Holies in the Temple, which were carried in triumph to Rome. Thus were the shrines of the ancient world violated by invading armies. The triumphs of peace were recorded in such arches as that at Beneventum, which is a story in stone of the home and foreign policy of the Emperor Trajan.

VALUE OF TOWN PLANNING.—An interesting lecture on "Town Planning" was given in the Philosophical Hall, Leeds, on Friday night, by Mr. W. T. Lancashire, the city engineer. Mr. Lancashire pointed out that the absence of town planning had rendered necessary very costly improvement schemes. In Leeds the amount spent on improvement schemes, excluding the money spent on the York-street and Quarry-hill insanitary areas, totalled the large sum of £2,474,182, the annual charges for sinking fund and interest representing more than a shilling rate. The summary of improvements in Leeds during comparatively recent years was a definite admission of wrong-doing in the past, an indication of the intention to sin no more, and a very powerful justification for the passing of the 1909 Town-Planning Act, which endowed towns and cities with powers which, if possessed and made use of a century ago, would have saved Leeds an immense capital expenditure.

The Central Picture Theatre in George-lane, Folkestone, is about to be enlarged from plans by Mr. J. Vant.

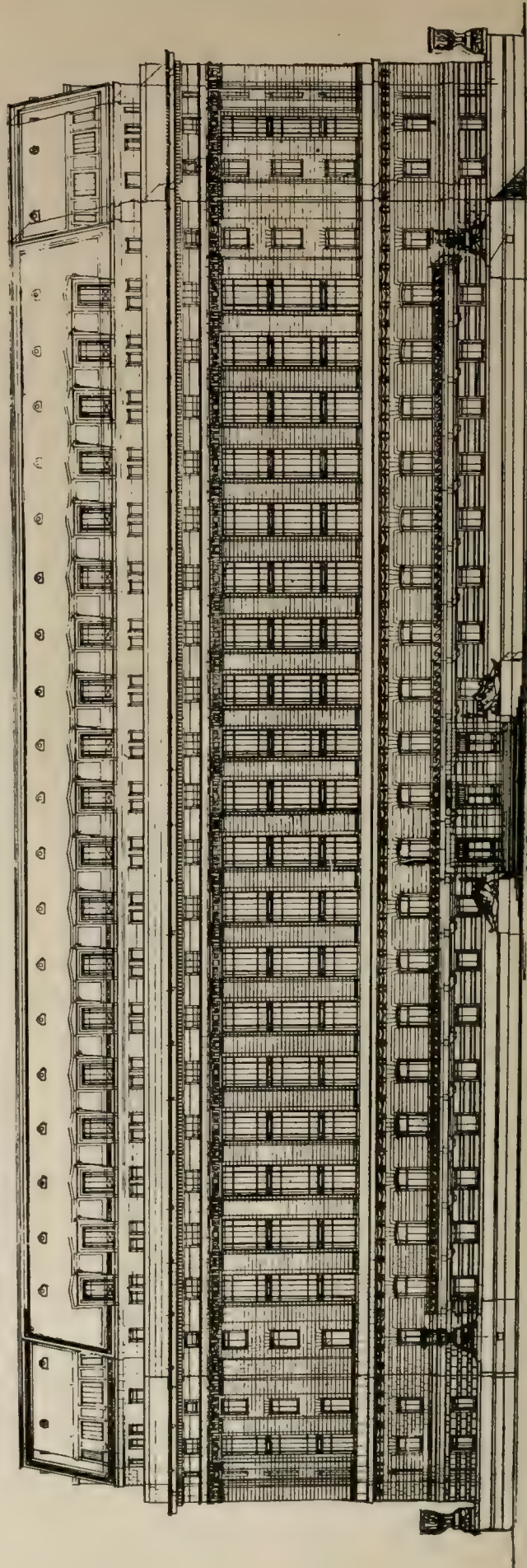
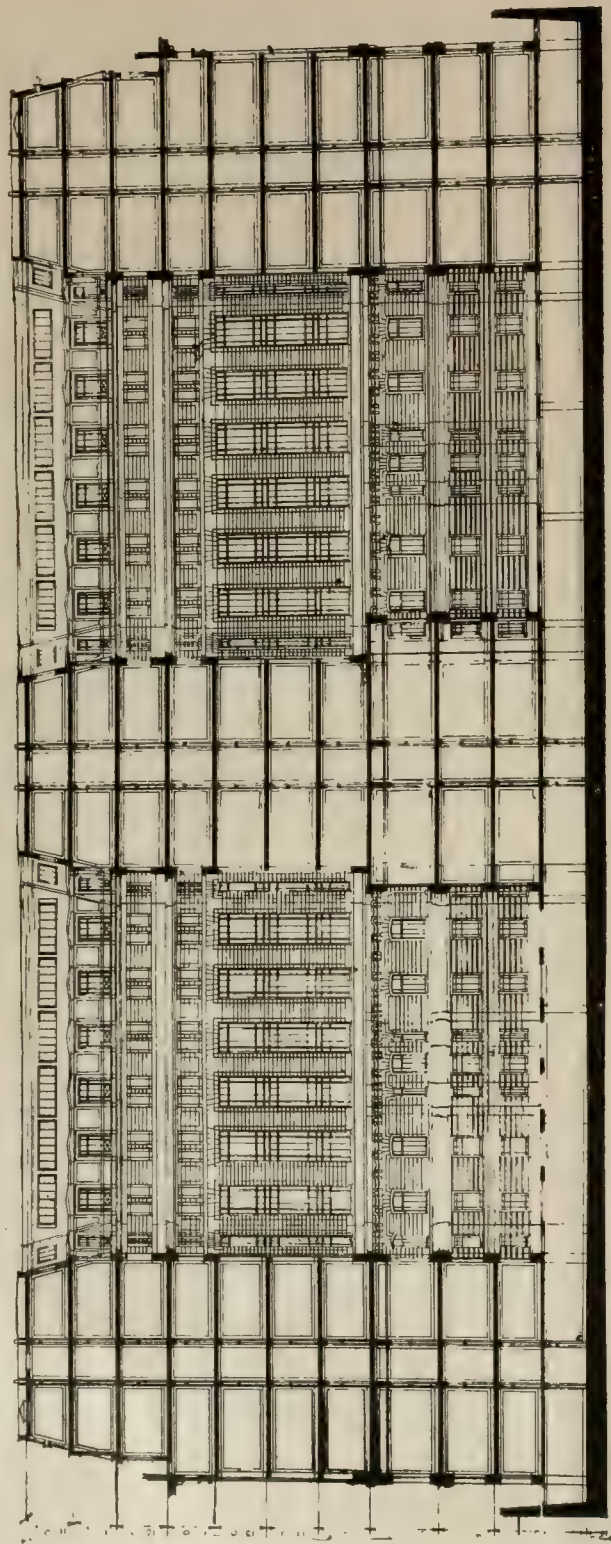
The Liverpool, London, and Globe Insurance Co.'s new building at Montreal, the expenditure on which is estimated to amount to 175,000 dol., has reached the plastering stage. The architects are Messrs. Percy E. Nobbs and Hyde, and the general contractors are Messrs. E. G. M. Cape and Co., Ltd., both of Montreal.

The Local Government Board have issued a Provisional Order to the corporation of Widnes authorising them, in addition to the sums already authorised to be borrowed for the purposes of their waterworks undertaking, to borrow, with the sanction of the Local Government Board, such further sums as they may require for waterworks purposes.

The question of building houses for the working classes was again discussed by the Wrexham Town Council on Tuesday. It was finally decided to proceed with the erection of a slaughterhouse at a cost of about £4,500, in substitution for the present one, and to build thirty houses, at a rental of from 5s. 6d. to 5s. 9d. per week, on land belonging to the corporation in proximity to the site of the slaughterhouse.

The Dean and Chapter of St. Paul's have lent to the Geffrye Museum, Shoreditch, over forty examples of woodwork and ironwork placed in the Cathedral in the time of Sir Christopher Wren, but removed from their original positions in the course of alterations from time to time. There are several fine specimens of wood-carving, some of which are from the hand of Grinling Gibbons. A series of carved-oak mouldings is exhibited in such a way that sectional drawings may be taken of them by students. The carved woodwork includes a prayer desk, a door with a wrought-iron panel, an overdoor, a stall-door, a reredos, and an oak capital. The specimens of wrought-iron comprise some fine examples of Tudor's work.

THE BUILDING NEWS, FEBRUARY 26, 1915.



BOARD OF TRADE NEW OFFICES, THAMES EMBANKMENT, S.W.: SECTION AND EAST ELEVATION.

Corrente Calamo.

The discussion last week, and again on Wednesday last, in the House of Commons, about the arrangement by the Office of Works that Mr. Montague Meyer should act as timber buyer for the War Office was lively, and more will probably follow if and when really full particulars are vouchsafed. When they are forthcoming, perhaps the information will be given more frankly than in the God-Almighty-to-a-blackbeetle style Mr. Harold Baker, the new Financial Secretary to the Treasury, seems to fancy. His attitude last week was in every way objectionable, both towards the Press and to those members "who seek to criticise," and he well deserved the sharp rejoinders he got. The arrangement was criticised solely on the ground that in the circumstances it was extravagant, and Ministers might really try to understand more clearly why general appreciation was shown when Mr. William Young, the Liberal Member who introduced the subject, expressed strong approval of Mr. Bonar Law's recent reminder to the Prime Minister that there are some business men still left in this country, and even in the House of Commons.

Not much more information was extracted on Wednesday last from Mr. Beck, who, representing the Office of Works, and answering a further question put by Mr. William Young, told the House that Mr. Meyer was only paid the agreed commission on the invoiced price, and not on the value of his own stock of timber taken over, and that Mr. Meyer had lost £2,000, as in the mean time timber had gone up by about twenty per cent. Neither did Mr. Beck seem quite sure about the modifications of the "negotiations proceeding," and Sir Henry Dalziel's concluding remark not unnaturally provoked more sarcastic laughter. It may be that the arrangement with Mr. Meyer is in every way a businesslike one, and that he is saving the country money. All that can be said at present is that those responsible for the Government have not as yet made that clear, and that a good many people would like to hear what some of the two hundred firms from whom prices were ascertained have to say about the matter, and whether any "large number were excluded," and, if so, why?

Strikes, with so many other things, are at present suspended because of the war; but they will undoubtedly return, probably the more vigorous for a good rest. Meanwhile, the "strike clause," as it is called, long ago became almost a common form in building and other contracts. The parties who sign such documents should read them carefully, small print and all, or they may find, when it is too late, that they have overlooked a strike clause tucked away in an unexpected position. This is what happened in a recent case in the High Court: A firm of shopfitters had made a contract for the fitting up of some stores with certain refreshment caterers. While the work was going on, there came a strike amongst the men doing the fitting, which caused delay. The shopfitters sued for the amount due on their contract. The defendants admitted most of it, but counterclaimed for a sum made up of £1 a day for delay under the usual time clause. The plaintiffs proved that the contract included a specification which was typewritten, and which contained, in very small

print, in its heading, the words, "All contracts are made and accepted subject to strikes." The defendants urged that they had never seen this proviso in small letters, nor was their attention drawn to it, as it should have been. It was urged that the print was the same as where in tiny type things are printed on the backs of railway tickets, and held not to be binding. But Mr. Justice Rowlatt ruled here that this small-print heading ought to have been noticed by the defendants, and so made them liable to pay the whole amount claimed.

We have had several inquiries lately for the names and addresses of makers or hirers out—if any such exist—of the necessary moulds and retaining-boards used in the erection of concrete walls, etc., *in situ*, with local materials, or for firms which carry out such work. We have failed to discover such. We are inclined to think an attempt to supply the demand would succeed if adequately made known. As many will remember, there was quite a spurt in concrete-building fifty years ago, mainly induced by the enterprise of several firms who undertook to supply or hire out the appliances mentioned, made according to their respective patents, which must long since have expired. One of the leading patentees was Mr. Joseph Tall, whose invention we fully described and illustrated on page 499 of our issue of July 27, 1866, and had occasion to notice on several subsequent issues in connection with buildings erected by its aid. Another firm—Messrs. Drake Bros. and Reid—established a similar business with considerable success. Any ordinary builder could easily make a set of moulds similar to those mentioned at a small cost, and might find them remunerative both to use and to hire out. If any makers still exist, it might be worth their while, as in not a few other cases in which, with some trouble, we have to hunt up not very wide-awake makers and vendors for waiting customers to make their whereabouts known in our advertisement or "Directory" pages.

A feature of the pictures of the Belgian forts bombarded by the German 42cm. guns is that the walls and roofs struck by the projectiles are not pierced smoothly by the shots, but completely shattered, even when the explosive force of the shells plays no part. These fortifications consist chiefly of concrete and armoured concrete. According to an article by Prof. P. Rohland which recently appeared in the "Zeitschrift d. V. d. Eisenbahnverwaltungen," the same phenomenon has been observed in experimental practice with targets of reinforced concrete. It was found that the shots did not break holes or fissures as in steel targets, but caused the whole target to crumble into small fragments. Prof. Rohland holds that the reason for this singular behaviour of concrete lies in the fact that there is a condition of high tension in sheets, walls, roofs, etc., of concrete due to the colloidal chemical nature of the cement, whose separate particles are pressed extraordinarily close to each other. When this tension is relieved at any point by a bursting shot, the complete crumbling of the entire sheet of concrete is the inevitable result. Hence he advises a return to the use of brick for fortifications. When a brick wall is struck by a shot, the result is merely the tearing of a big hole, since, owing to the looseness of the structure, only the parts in immediate contact with the spot hit are affected.

A Bill to register architects in New York was introduced in the Senate on Jan. 14, and referred to the Committee on Judiciary. The Bill provides that every person, before being known as an architect, must secure a State certificate of his qualification to practise under that title. A Board of Examiners is provided for, to be appointed by the Regents of the University of New York. Candidates, in order to take the examination before the Board, must have had an education equivalent to an approved high-school course, and, in addition, such courses in mathematics, history, and one modern language as are given in the first two years of a college course. The candidate must, in addition, have had five years' practical experience in an architect's office. Persons engaged in the practice of architecture when the law takes effect are given a certificate without an examination. A fee of 25dol. is fixed for the issue of a certificate, and practice without a certificate is made a misdemeanour punishable by fine or imprisonment.

The official notification as to this year's Royal Academy Exhibition has now been issued to the effect that the Galleries will open on Monday, May 3, and close on Saturday, August 14. The day for sending in architectural drawings, with water-colours, black-and-white studies, or engravings, etc., will be Friday, March 27. Oil-paintings will be received either on Saturday, March 27, or Monday, March 29. Sculpture and enamels are due on Tuesday, March 30. Reception hours each day between 7 a.m. and 10 p.m. Not more than three works may be sent by any one artist.

The Dundee School Board have resolved to hold a competition among local architects for the extension of the Harris Academy, Dundee. The estimated cost of the enlargement is £28,000.

The death occurred at Selkirk on Saturday of Mr. William Nichol. The deceased, who was in his 91st year, had been in business in Selkirk as a painter and decorator for over forty years. He was also an artist.

Mr. Reginald Whitworth Gough, younger son of the late Mr. Hugh Rouman Gough, F.R.I.B.A., past President of the Society of Architects, died on Friday last, after a brief illness, aged 33 years.

At the town hall, Manchester Mr. P. M. Crosthwaite has held an inquiry for the Local Government Board respecting the city council's application for sanction to borrow £60,000 for works of sewerage in the city area, and £1775 for the purchase of property in the township of Flixton adjoining the Daythulme sewage-disposal works.

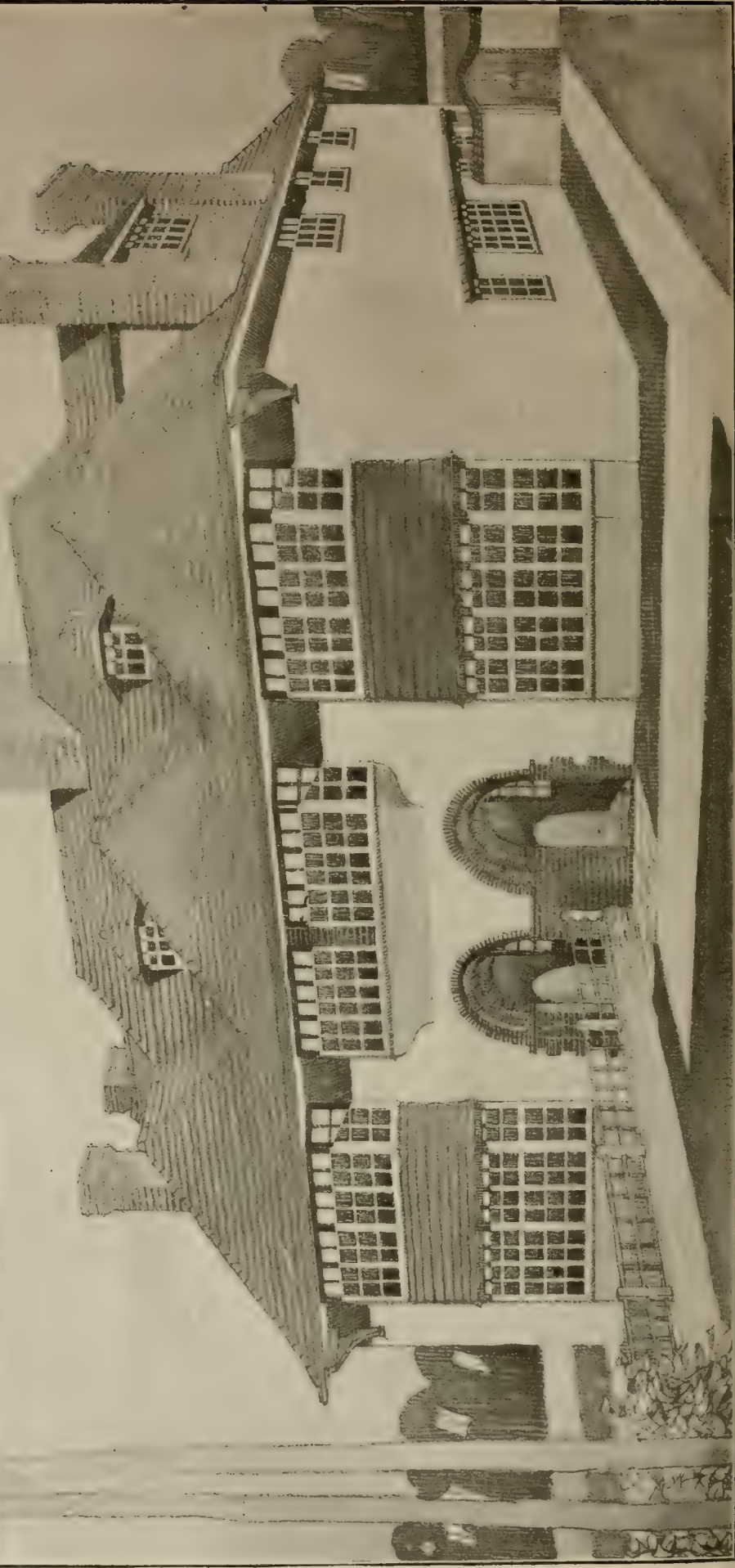
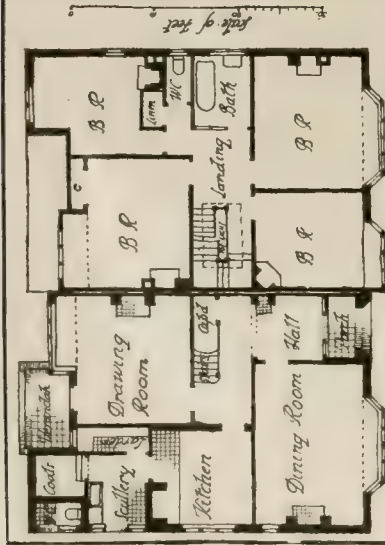
The Professional Classes War Relief Council, 13 and 14, Prince's-gate, S.W., are holding an exhibition of objects of decorative art at 13, Prince's-gate, in order to help professional artists, designers, and craftsmen. They will not accept any amateur work. This exhibition will be opened early in April, and will be interfere in any way with the picture exhibition, which will be open to the public on and after Monday, March 1, from 10.30 a.m. to 5.20 p.m.

At the Convocation of the University of Cambridge a committee has been appointed to consider the recommendations to-day made by Sir Lewis Dibdin (Dean of the Arches), Sir Alfred Kempe, and Sir Chadwyck Healey, who have been inquiring into the question of the care of ancient churches. The committee will be empowered to confer with any corresponding body that may be appointed in the University of York.

The Commissioners of H.M. Customs and Excise are proceeding with alterations to the Post Office in Constitution street, Bath. Plans for the reconstruction are to be lodged at March 1. A feature of the reconstruction will be the removal of sorting work to a new building erected in Kirk-street. The sorting office in Constitution-street will be converted into a telegraph department. An alteration will also be effected on the principal entrance to the building.

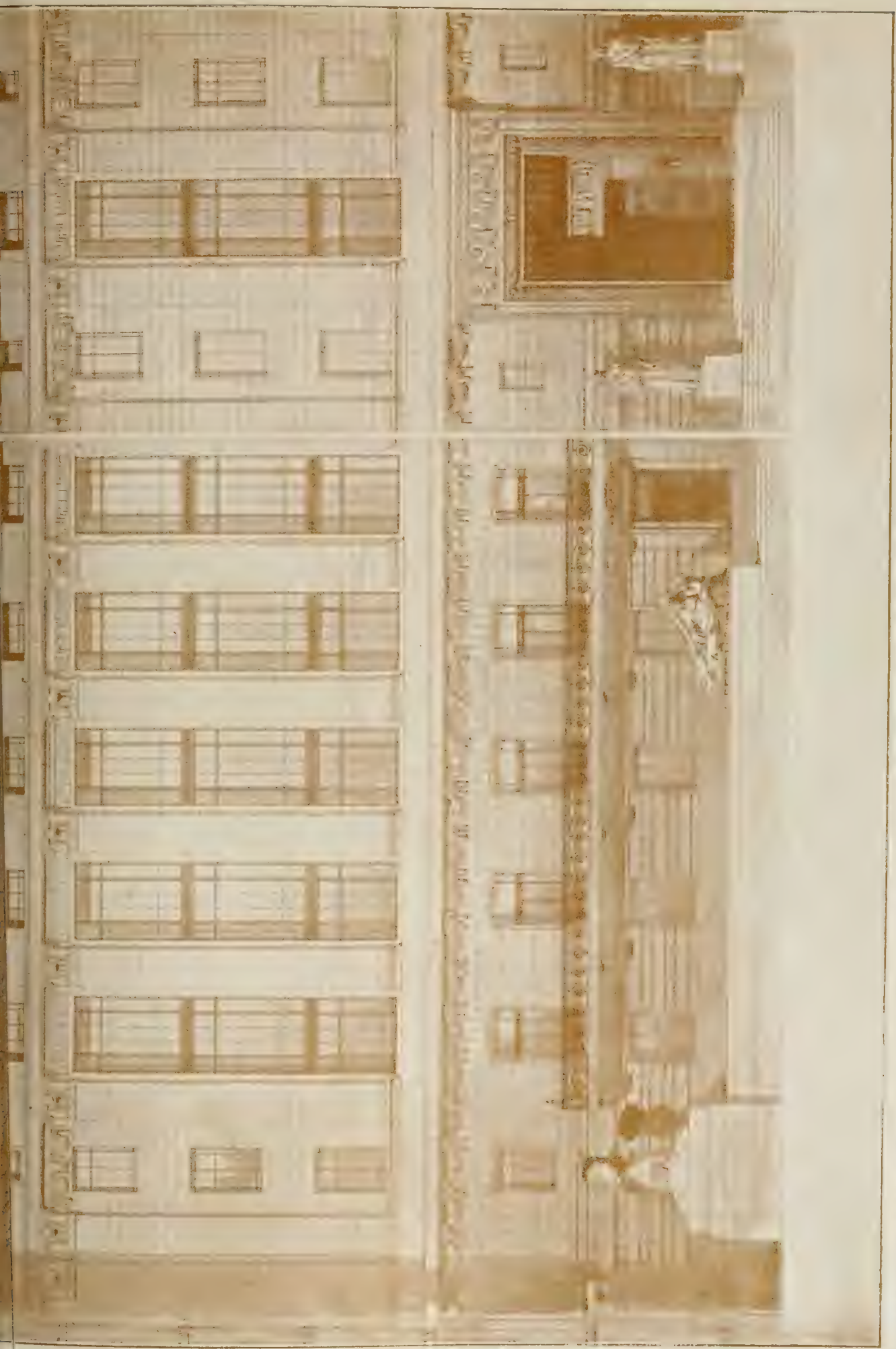
PAIR OF HOUSES, WEST AVENUE, EXETER.

ELLIS SON & BOWDEN F.S.I. EXETER.



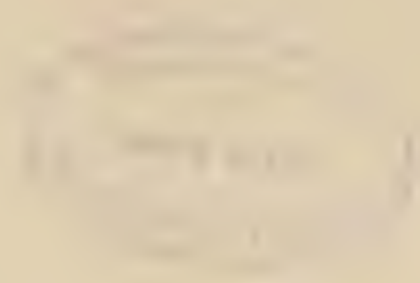
THE BUILDING NEWS, FEBRUARY 26, 1915.





BOARD OF TRADE NEW OFFICE, THAMES EMBANKMENT, S.W. VIEW OF RIVER FRONT AND DETAILS OF BOTH ELEVATIONS.
DESIGNED BY MR. ROBERT A. KIN ON AND GEORGE L. ALEXANDER, A.A.R.I.B.A. ARCHITECTS.

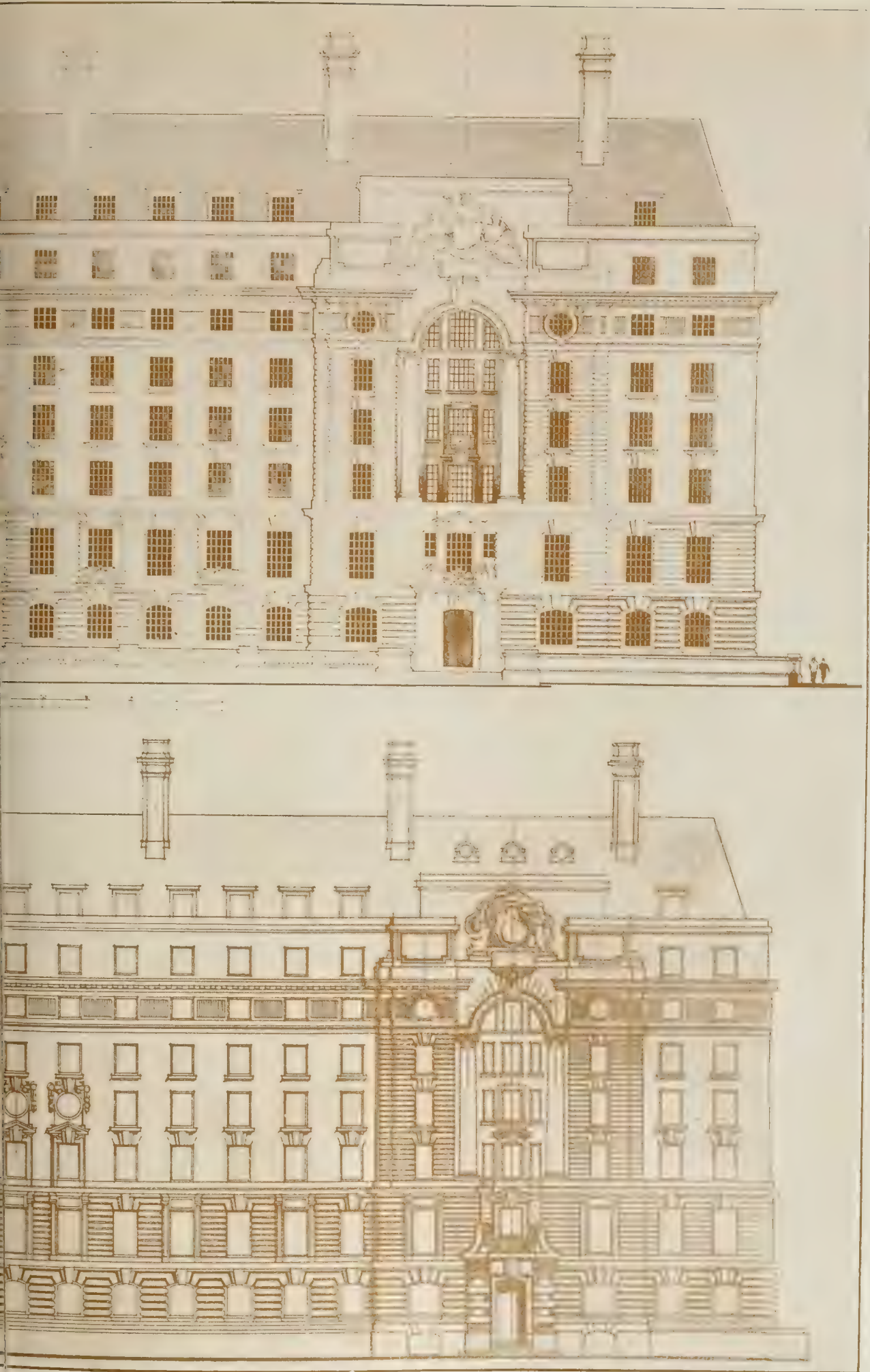




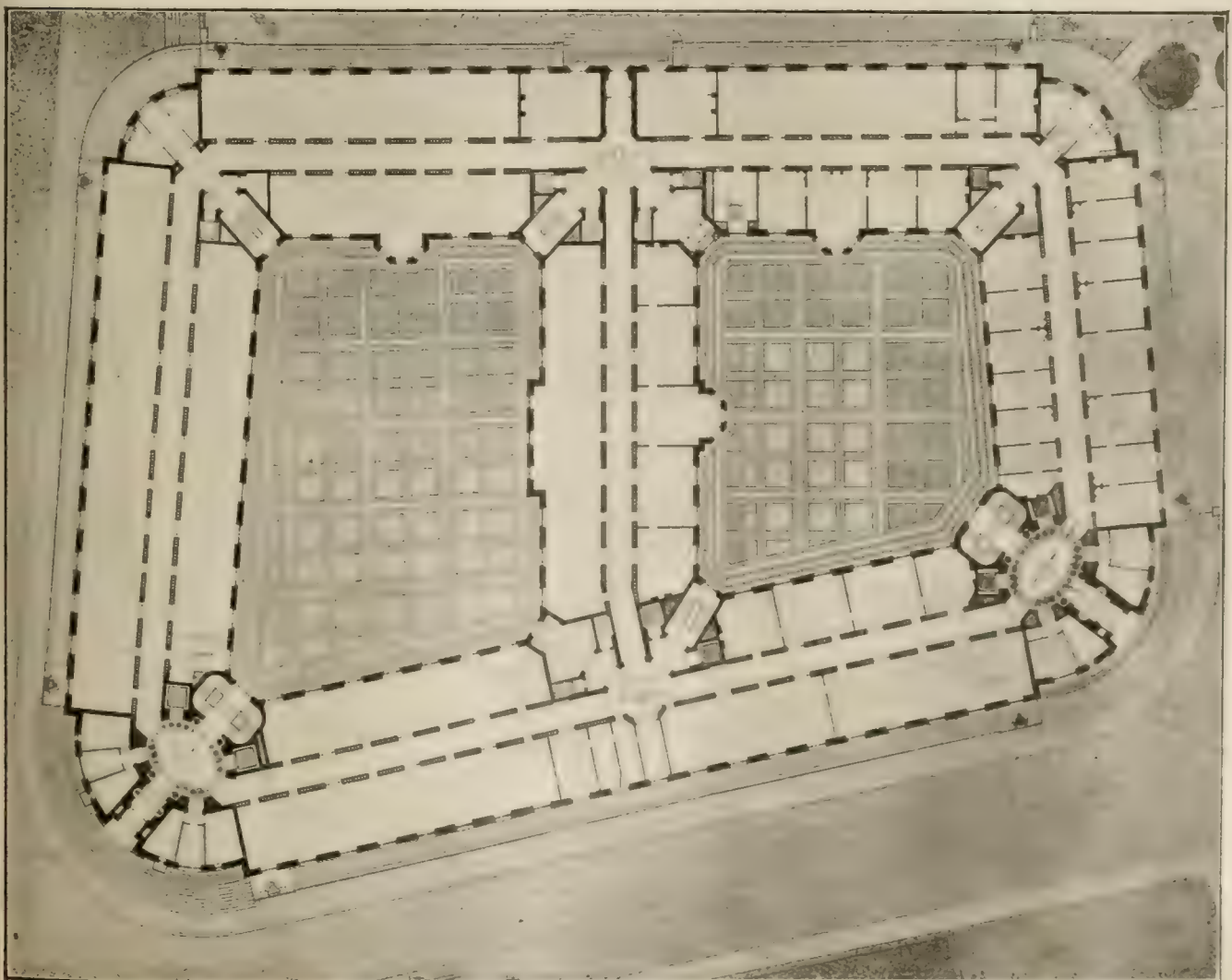
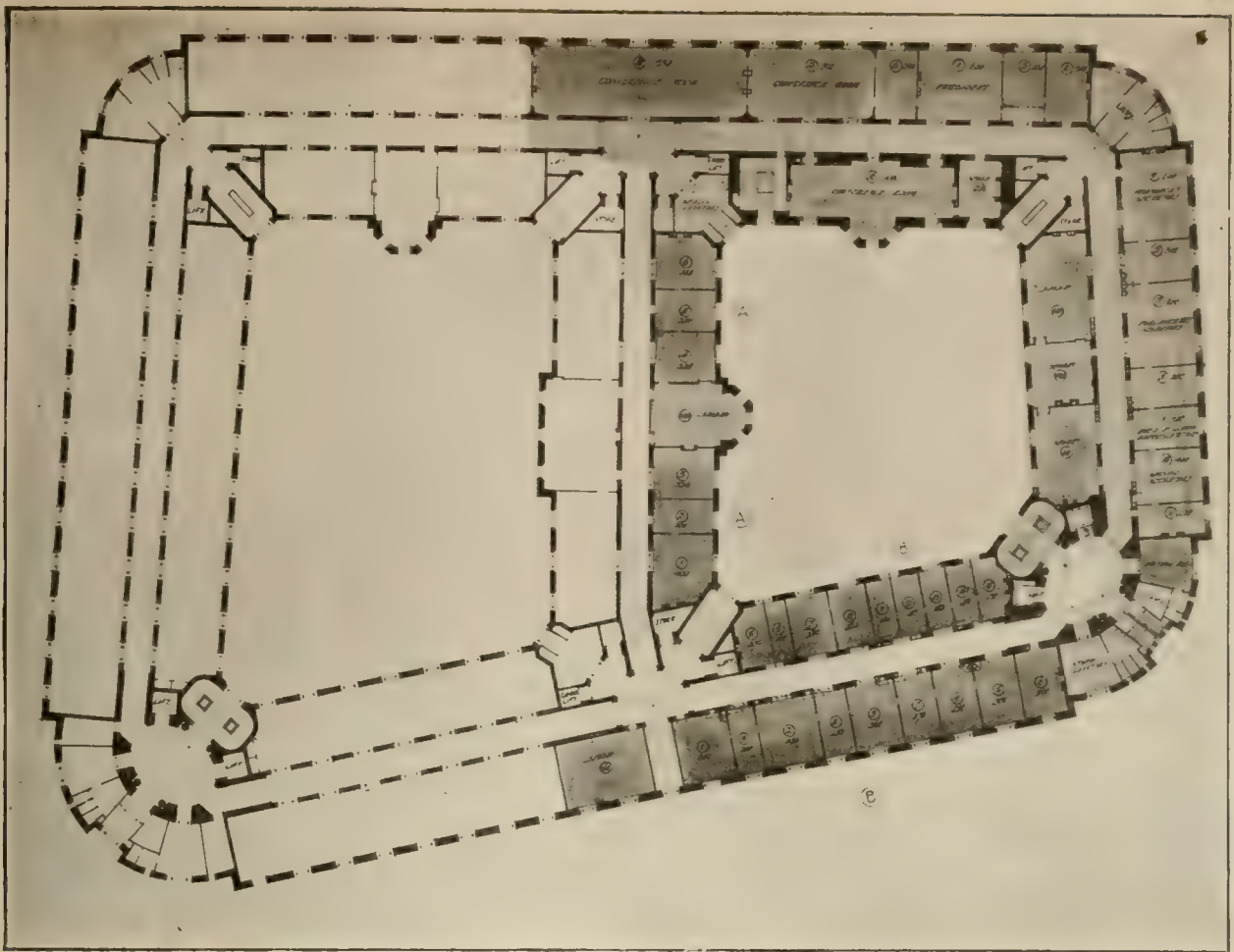


BOARD OF TRADE NEW OFFICES, THAMES EMBANKMENT. S.W.

Design by Mr. C. T. F.W.S.



WHITEHALL FRONT AND ELEVATION TOWARDS THE RIVER.
G. A.R.I.B.A., Architect.



BOARD OF TRADE NEW OFFICES. THAMES EMBANKMENT, S.W.: GROUND AND PRINCIPAL FLOOR PLAN.—Design by Messrs. R. ATKINSON and G. L. ALEXANDER, A.A.R.I.B.A.

OBITUARY.

Sir William Eden, Bart., who died on Saturday, aged sixty-five, was an artist in water-colours of great ability, with a refined feeling for colour harmonies. His works were often hung at the Royal Institute of Water-colour Painters, the New English Art Club, and the Dudley Gallery, and also at the Paris Salon. He will be best remembered for his lawsuit with Whistler, heard in Paris, just twenty years ago, over the portrait of Lady Eden. Whistler executed a small full-length study in brown and gold, and was offended when Sir William offered him one hundred guineas as an honorarium. The eccentric artist cashed the cheque, but refused to part with the portrait, and when legal proceedings were instituted in Paris, obliterated the head of the portrait. In March, 1895, Whistler was ordered by the Court to deliver the portrait as painted, to refund the hundred guineas, and pay £40 damages. He appealed to the Cour de Cassation, where, after twenty-one months' delay, Whistler was allowed to keep the portrait if it was rendered unrecognisable (which had already been done), Sir William was awarded 5 per cent. interest on his hundred guineas, and the £40 damages, but anered in the costs for the appeal.

Sir Charles Augustus Hartley, K.C.M.G., the well-known harbour engineer, died on Saturday at 26, Pall Mall, S.W., at the advanced age of ninety years. A native of Hedworth, County Durham, he was for some years employed on railway construction in Scotland, but after 1856 devoted himself to hydraulic engineering, in which he obtained a world-wide reputation. From 1856 to 1907 he was the engineer-in-chief and consulting engineer to the European Commission of the Danube. In 1867 he reported to the Foreign Office on engineering questions connected with the River Scheldt, and he was consulted about the improvement of the harbour of Trieste. In the Black Sea region his plans for the enlargement of the harbour of Odessa won the premium offered by the Czar in 1867, and his advice was sought in regard to the rivers Don and Dnieper, and the harbours of Constanza, Bourgas, and Varna. Sir Charles Hartley's advice was sought by the Indian Government in respect of the improvement of the Hugli below Calcutta and of Madras harbour, and he was a member of the Board appointed by the President of the United States to report on the best means of opening the South Pass of the Mississippi to navigation. He was one of the British representatives on the Commission which was established in 1884 to consider the question of widening the Suez Canal. He was knighted in 1862, and created a K.C.M.G. in 1884.

The cause of public health has sustained a serious loss by the death on Saturday, at the age of sixty-eight, of Dr. E. C. Seaton. Dr. Seaton was appointed medical officer of health to Nottingham in 1872 and to Chelsea in 1884, and he subsequently became the first health officer for the county of Surrey. He was a special commissioner for the Government inquiries on housing of the working classes in 1890, and was one of the pioneers of the movement which resulted in the compulsory notification of infectious diseases.

Mr. Walter Hine, of Gaywood, has been appointed highway surveyor to the Freebridge Lynn Rural District Council.

The premises of the Irish United Assurance Society in Dame-street, Dublin, are to be rebuilt from the designs of Mr. T. F. MacNamara, architect, of that city.

The new wing of the House of the Resurrection, Mirfield, was dedicated last week. It is two years ago since it was proposed to add a new retreat-house to the present buildings, and this, now completed, forms the north-west portion. The £4,700 received will be amply sufficient to pay for the new building and furniture. The wing, which completes the quadrangular form of the buildings, has twenty-nine bedrooms, two common rooms, an oratory, and an entrance-hall, and later it may be enlarged by the addition of an upper floor, providing twelve more bedrooms. Mr. Temple Moore is the architect.

Building Intelligence.

BIRMINGHAM.—The new Weights and Measures Office erected in Corporation-street was formally opened on Tuesday by the Lord Mayor. The building is faced with Tidford brick relieved with terracotta dressings, and is two stories in height, containing on the ground floor a general receiving office, a public weighing-machine, and testing, adjusting, sandblast, and mess rooms. One the first floor are balance-rooms, inspectors' offices, mess-room, and private offices. In the basement there is accommodation for the heating-chamber, coal, and store-rooms.

SQUIRREL'S HEATH, ESSEX.—An extension of All Saints, Squirrel's Heath, near Romford, was dedicated last week. The additions, consisting of north and south aisles, under gables, five facing each way, exactly double the size of the original structure, exclusive of the chancel. Increased accommodation is provided for 175 worshippers. The windows have been treated with leaded glazing, and three stained lights have been refixed as near to their old positions as possible. A feature is the carved window-panel over the south entrance, which on its reverse side is to be carved as a sundial. The architect of the church is Mr. S. Phillips Dales, M.S.A.

The urban district council of Weston-super-Mare have decided to purchase for £11,900 the Ashcombe House estate for the extension of the cemetery.

Works of sewage-disposal have just been completed for the village of Colwall, Herefordshire. Messrs. Taylor and Wallin were the engineers, and the cost has been £2,550.

Plans submitted by Messrs. William Beardmore and Co., Ltd., for the extension of the engineering department of their naval-construction works at Dalmeir, N.B., have been passed by the Clydebank Dean of Guild Court. The cost is estimated at between £9,000 and £10,000.

The Roberts memorial recreation-hall for soldiers by the dock-gates at Southampton has just been opened. It is of corrugated iron, and contains a main assembly-room 70ft. by 40ft., a sunken area divided into billiard-room and reading-room, temperance canteen, and kitchen. Mr. H. Cawte, of Southampton, was the contractor.

Preliminary plans are being prepared by Messrs. McKim, Mead, and White, architects, 101, Park-avenue, New York, for a new building for the National Institute of Arts and Letters and the American Academy of Arts and Letters to be erected on the block bounded by Broadway, Riverside Drive, 155th and 156th streets, New York. This site was given for the purpose of the Institute.

The water committee of Aberdeen Town Council have unanimously recommended the council to proceed at once with the promotion of a Bill before Parliament for securing an enlarged and improved supply of water from the Dee at a total estimated cost of £450,400 for ten million gallons per day. The cost includes the expense of purification by lime, filtration, and storage.

The new schoolrooms in connection with the Congregational Church at Wymondham, Norfolk, were formally opened on Wednesday week. The building consists of five classrooms adjoining the existing school, and kitchen, stores, and heating-room have been added, and the old premises renovated and rearranged. The work was carried out from plans by Mr. J. W. Fisher, architect, of Wymondham, by Mr. R. Curson, builder, of Hetherst, whilst the renovation of the old school hall was entrusted to Mr. H. Bidwell, of Wymondham.

The Government's new garden city for Arsenal workers is to be laid on on estates of 66 acres and 30 acres each, on opposite sides of the main road at Well Hall. His Majesty's office of Works have made arrangements with Messrs. Leslie and Co. and Mowlem and Co. for the erection of the houses. The firms are to carry out the work on the prime-cost basis—i.e., the work will be measured by inspectors and surveyors as it proceeds, the bills for materials checked, and a certain percentage allowed for profit. There will be four different types of houses, which will be erected in blocks of four and six.

COMPETITIONS.

DONCASTER.—Out of the three hundred applications for particulars of the competitions for the Doncaster housing scheme, 106 competitors have responded, the plans having been sent in during the past week. Mr. Patrick Abercrombie, of Liverpool University, is the assessor.

GOUROCK.—In a limited competition for the Gourrock Town Hall, the assessor, Sir John J. Burnet, R.S.A., has awarded first place to Mr. A. N. Paterson, M.A., A.R.S.A., F.R.I.B.A., of St. Vincent-street, Glasgow. The estimated cost of the building is £8,000.

PAISLEY.—Mr. John Watson, F.R.I.B.A., president of the Glasgow Institute of Architects, assessor in the competition for the adaptation of the Globe Hotel, Paisley, as school-board offices, has awarded the first place to Mr. James Carruthers, I.A., L.R.I.B.A., of Bath-street, Glasgow, and the two premiums to Mr. William Brown, Paisley, and Mr. Matthew Adam, L.R.I.B.A., Buchanan-street, Glasgow.

SOUTHEND-ON-SEA HOUSING SCHEME.—The award has just been made known in the recent competition for the new housing scheme at Ruskin-avenue, Southend-on-Sea, for the Southend-on-Sea Corporation. The design submitted by Mr. Percy G. Hayward, M.S.A., of 4, Broad-street-buildings, Liverpool-street, E.C., and Queen's House, Hamlet Court-road, West-cliff-on-Sea, being awarded the first premium, Mr. Percy Brockbank, of County-chambers, Southend-on-Sea, being placed second.

Mr. F. Parr, borough surveyor of Bridgwater, has been voted by the Council an honorarium of £100 as remuneration for extra services.

An extension of the Doncaster Corporation tramways system from Balby to Warmsworth has been opened. The cost of the extension has been £21,000.

The Penarth Urban District Council are about to carry out a sewage-disposal scheme for the western portion of their district at an estimated outlay of £15,000.

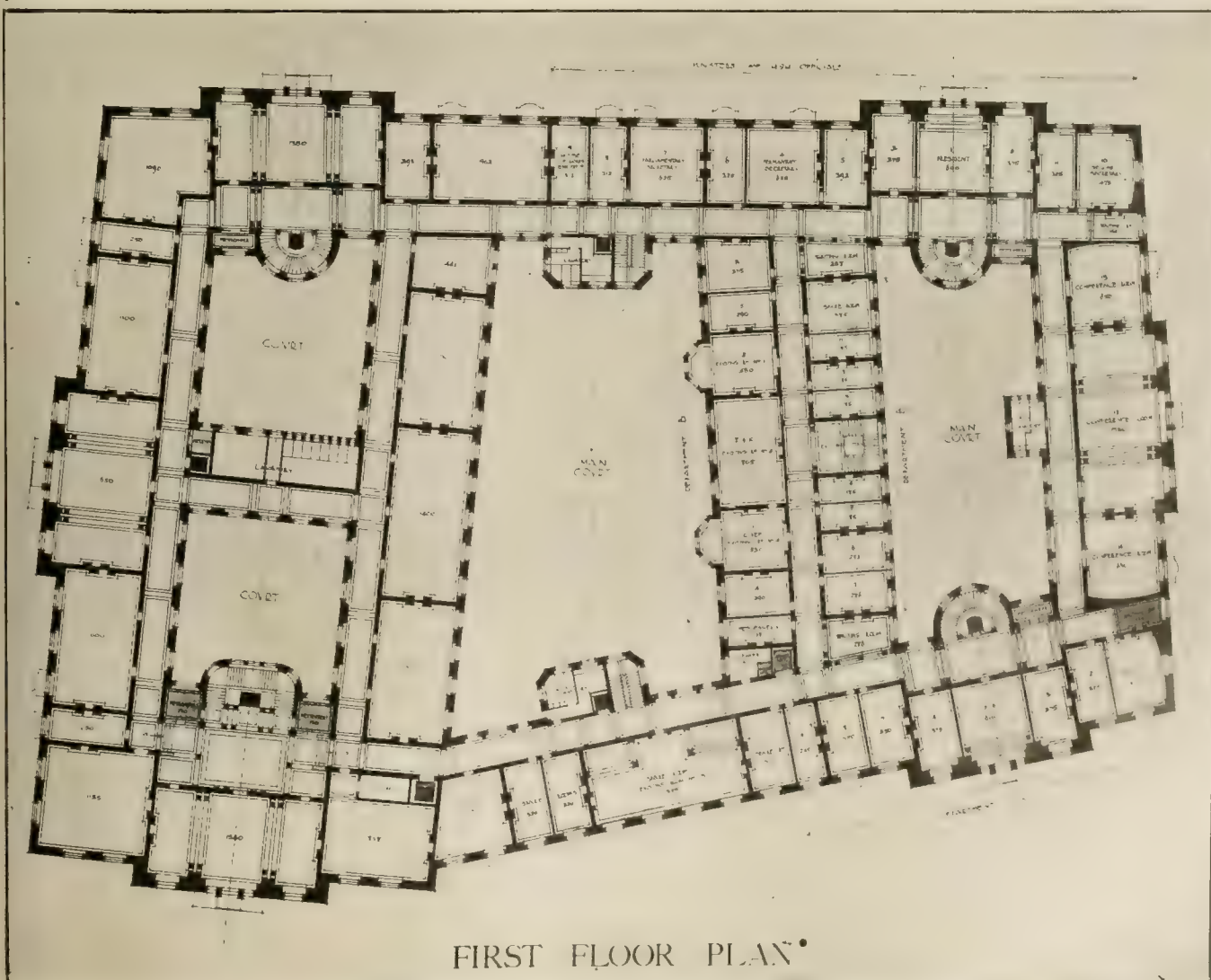
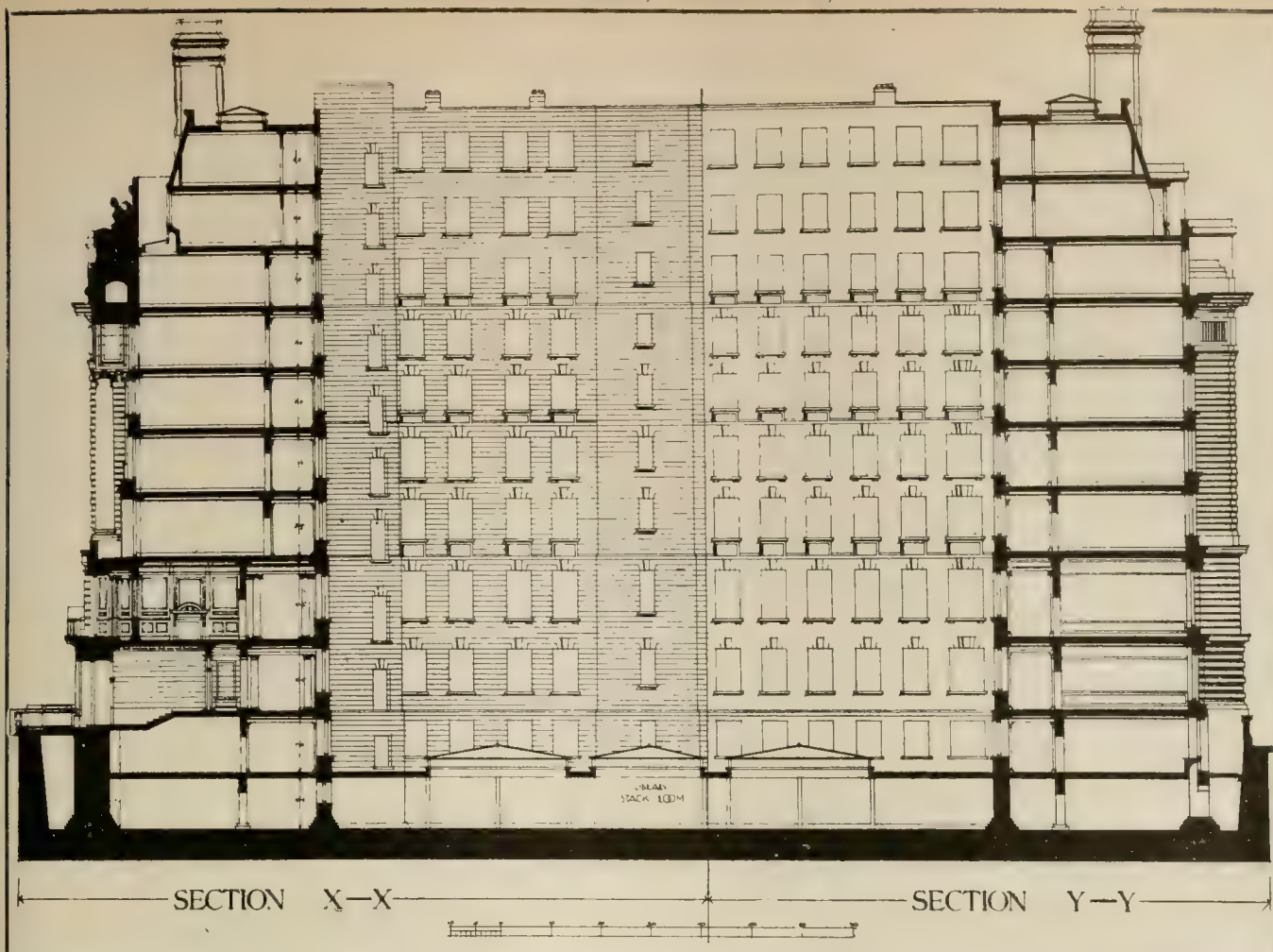
The directors of Pumpherson Oil Company recently presented an institute to the villages of Seafeld and Breich. The building comprises a hall for meetings accommodating 600 people, a reading-room and library, billiard-room, bowling-alley, baths, retiring-rooms, and a caretaker's house.

The Bristol City Council having applied to the Local Government Board for sanction to borrow £2,000 for the provision of a municipal lodging-house for women at King-square, Mr. Courtenay Clifton, M.Inst.C.E., an inspector of the Local Government Board, has held an inquiry concerning the application.

The town council of Launceston received on Monday the pleasing news that under the will of the late Mr. George Burt the edifice known as "Newport Town Hall" had been bequeathed to the council. The building was erected in 1826, and was erected concurrently with the election of two members for the pocket borough of Newport.

Mr. Robert Clarke, a well-known Hereford architectural sculptor, died on Thursday in last week, at his residence, North Villas, Barr's Court-road, Hereford. Mr. Clarke was 66 years of age. Specimens of his labours are to be seen in Hereford Cathedral, and other churches in the diocese. He also acted as surveyor to the Dean and Chapter in connection with the fabric of Hereford Cathedral.

A third town-planning scheme was the subject of an inquiry on behalf of the Scottish Local Government Board in Glasgow on Friday, the scheme for the Upper District of the county of Renfrew. Mr. J. Walker Smith, M.I.C.E., presided. The area which it is intended to plan contains 840 acres lying north of the River Clyde, bounded on the west by the burgh of Clydebank, on the north by the county of Dumbarton, and on the east by the city of Glasgow. Mr. M. P. Fraser, for the corporation of Glasgow, stated that they had a competing scheme for the area, and their contention was that the district would be more suitably planned by Glasgow. Dr. A. Campbell Munro, Medical Officer of Health, for the promoters, said that the area was ripe for town planning in the matter of roads, houses, and open spaces. The county authority were as competent as Glasgow to carry out the scheme, and would do it on a more economical scale.



BOARD OF TRADE NEW OFFICES, THAMES EMBANKMENT, S.W.
Design by Mr. C. T. ARMSTRONG, A.R.I.B.A., Architect.

Correspondence.

BUILDING COSTS AFTER THE WAR: WILL THEY INCREASE OR DECREASE?

To the Editor of the BUILDING NEWS.

SIR,—There is a tendency throughout the country amongst private owners, companies, and especially local authorities, to postpone building operations until after the war, in the hope that the cost of building will then be considerably lower than at the present time. I have recently been discussing the assumption underlying the attitude of the parties mentioned with numerous architects, builders' merchants, and contractors in South Wales, and have been forced to the conclusion that not only is there no likelihood of a reduction taking place on the termination of hostilities, but that an increase is quite probable. The reasons for this conclusion may be stated as follows:—

1. Owing to the general insecurity, the tightness of the money market, and the increased cost of materials, an enormous amount of work that had been contemplated before the commencement of the war has not been proceeded with. It is probable that the value of such suspended contracts in the United Kingdom considerably exceeds £100,000,000, and we should probably allow for at least five times this amount for Continental suspensions. On the termination of hostilities the bulk of this work will go forward, and the demand for material will be enormous.

2. In addition, the towns and villages of Belgium, France, and Poland that have been partially or wholly destroyed will need to be rebuilt, and we may safely expect that the huge demand for material thus set up will have a tightening effect on the markets.

3. For many years past the prices of most classes of commodities have advanced very considerably. Since the outbreak of the war the increases have been abnormal, and although reductions are probable when peace is restored, it is not likely that prices will return to the pre-war level. It may be assumed, therefore, that the cost of living after the war will be higher than the cost before the war. In that event, there will be considerable labour unrest, and wages in the building trade, as in other trades, must go up. The demands of the building artisans and labourers will, of course, be resisted; but as the labour needs of builders are likely to be great, whereas the volume of available labour will be reduced by the wastage of war, the men are almost certain to have their demands conceded.

4. We are informed that after the war there will be a huge boom in trade. In that event, the demand for capital will be great, and the rate of interest will be high. If the prices of labour, materials, and money increase, how can we anticipate any considerable reduction in the cost of building?

I have put forward these considerations not in any dogmatic spirit, but in order that they may be examined by men who are thoroughly familiar with conditions in the building trade. Public bodies and building owners generally are usually not in a position to judge the trend of affairs in such a complex industry as building, and I feel sure that they would welcome information as to the future from those who are in a position to speak with authority. Are these people wrong in supposing that there will be a reduction in building costs after the war? If so, a clear pronouncement on the subject would surely be of advantage to the building trade. Perhaps some of your readers would give expression to their views on the subject.—I am, etc.,

EDGAR L. CHAPPELL.

Secretary, South Wales Garden Cities and Town-Planning Association.

3, Pembroke-terrace, Cardiff.

UNHEALTHY SCHOOLS.

SIR, It is very pleasing to those who have the welfare of the schoolchildren at heart to hear "An Old B.N.D.C. Boy" affirm that when "Humanitarian" so gravely warns us

against the evils and the danger of cross-ventilation and through-draughts, of which that system consists, "he has told us nothing but what is instilled in the most elementary mind." It is a pity, however, that, so far as "An Old Boy" is concerned these seeds of knowledge seem to have fallen on stony ground, in that he advocates the infliction on little children of that fell instrument of cruelty, cross-ventilation, which, as is rightly said, could only be employed with impunity on helpless children and the mentally defective.

There seems, indeed, to be a general consensus of opinion that only medical practitioners are the gainers by it, as it consists not only of intolerable and dangerous draughts, but pure air can never be breathed with it—only diluted foul air, and the less the draught the fouler the air. The vitiated air is also not extracted as it ascends and got finally rid of, but is returned by the descending current and rebreathed before displacement, and this process goes on continuously and without change.

"An Old Boy" is evidently not acquainted with the Board of Education's recommendations re the heating and ventilation of schools when he says, "neither can he separate heating from cross-ventilation." The Board's suggestion is that these should be kept separate and not combined.

When he so boldly asserts that we are "a degenerating people," and that cross-ventilation is our only hope of salvation—by weeding out the weaker, I suppose—he is certainly as self-deluded on that point as his co-believers the Germans have doubtless now discovered themselves to be.

When he informs us that he and his co-advocates are "comfortably sitting on the fence," I can only say that his conception of comfort and assured confidence in the opinions he holds is not the normal view; it has, doubtless, however, its advantages, when one is anxious to see which way that skittish and erratic animal the ventilation cat is going to jump. The position is a trying one; but what can you expect if one prefers to roost on such an unstable and tottering perch as the back fence, particularly in this weather, instead of sitting comfortably in an easy-chair by one's own fireside?

"An Old Boy" may perhaps consider that I am inclined to be as facetious as his own good self, and am treating a serious subject with unseemly levity. My excuse must be that when I think of the sorely-trying schoolchildren, subjected to a continuous cold down-draught in this wintry weather, I, like Figaro, "make haste to laugh for fear that I may weep." Even Mr. Thomas admits that it's "a crying evil.—I am, etc.,

JENNY WREN.

SIR,—"Beaten" as "Saul among the prophets," in describing cross-ventilation as "a perfect blizzard," and a "tearing" one at that, knocks into the proverbial "cocked hat" all your other correspondents' attempts to adequately describe that primeval method of barbarism. It has certainly been called some very hard names, but it has been reserved for one of its own apostles, who, from his experience of it should know it best, to christen it correctly, and he has named it well, "a perfect blizzard"—"out of your own mouths are ye condemned."

Henceforth that name of ill omen for shivering school-children, cross-ventilation, ceases to exist, and becomes as extinct as the dodo. "The blizzard" has taken its un-honoured place for the short (let us hope) remaining span of its tempestuous and tortuous career. It is a name, like "baby-killers," to which it has an affinity, that will stick.

I have heard it referred to as a "hurricane," "typhoon," "cyclone," and "sirocco"; but "the blizzard" is the best and more truly descriptive of its appalling character, and it possesses the unique advantage of the most unimpeachable testimony from its own apostles in support of its absolute deadliness. It would almost seem to be superfluous for those acquainted with its dangers to continue to warn us against

them; its devotees satisfactorily fulfil that beneficent duty. That being so, a Royal Commission seems hardly necessary, when its own followers so effectually give the ogre Through-draught its quietus. Assuredly the good cause waxeth exceedingly, and there is hope for the frozen little ones yet.

"Beaten" has won the honourable distinction of "knocking out" that blustering bully and boisterous windbag "The Blizzard" in the first round, by one staggering blow on the solar plexus, which, for the information of the uninitiated, I would explain means having the wind knocked out of you.

It is a great feat. Jack Johnson, Carpenter, or "the Tipton Slasher" could not have done better. Just think of it!—the pride and hope of its backers, the stormy petrels, to be struck down and beaten to a frazzle in one round; to be knocked out by a single shrewd blow delivered with the overwhelming force of a blizzard, and by their own bottle-holder! It's enough to make the angels weep, from their point of view, and the gods to laugh from that of the children's friends. It's Homeric, and would have made the heart of Rabelais glad with joy and Panurge to snigger in his grave.

"Beaten" has given that ugly bruiser of young children, "The Blizzard," its coup de grâce with a vengeance, and placed its supporters hors de combat irretrievably. Nothing could survive such a smashing, pulverising blow straight from the shoulder. You can almost imagine you hear the bones scrunch with that sledge-hammer stroke.

Your correspondent has earned the thanks and the gratitude of all schoolchildren and lovers of children, and if he would only add to his valuable testimony the favour of his name, I am sure it would be treasured in the hearts of us all.

Now that the icy altars of the Moloch of through-draught, upon which so many of the innocents have been immolated, are shattered and crumbled in the dust, the car of Juggernaut laid low, and that flighty old deity of the air who has so truculently lorded it in "the Temple of the Winds," is blown sky high, hoist by his own blizzard, perhaps the high priests and worshippers of these false gods may, if the age of miracles is not past, see the error of their ways and give the little ones a chance by renouncing their rôle of benevolent Inquisitors, and ceasing to torture them in the name of Health with that grizzly menace and atrocious example of hygienic (?) "frightfulness" "the blizzard," that uncouth monster well dubbed "the Frankenstein of ventilation" and "the doctor's friend"—a significant and sinister conjunction.—I am, etc.,

CRUSADER.

Mr. A. P. Vaughan, of Luton, has been selected from 186 applicants to fill the post of clerk of works in the erection of twenty-eight working-class dwellings for the Uxbridge Urban District Council.

The Bolton-on-Dearne Urban District Council have adopted plans by Messrs. Garside and Pennington, of Ropergate, Pontefract, for an extensive housing scheme, which will include 194 dwellings of three types and five houses and shops in Barnsley-road, Goldthorpe, and 99 dwellings of three types and eight houses and shops in Furlong-road, Bolton-road, Bolton-on-Dearne.

A return issued by the Amalgamated Society of Carpenters and Joiners shows that the voting for the election of an assistant general secretary now stands as follows: A. G. Cameron, 6,920; J. L. Wright, 5,506; R. Robertson, 1,210; C. H. Young, 905; A. Dearnley, 872; and F. W. Lindley, 559. The ballot cannot be completed pending the tabulation of a number of additional returns from the overseas branches.

An instance of industrial patriotism is reported at Walsall, a local builder, Mr. W. J. Warman, formerly of Lichfield-street, having not only enlisted himself, but induced practically every member of his staff of employees to do the same. The only representative of the firm left is a man who, being a cripple, is ineligible for military service. Mr. Warman himself is a pioneer sergeant in the 7th South Staffords, and his brother, Mr. D. Warman, who was formerly his foreman, is a sergeant-major in the 5th South Staffords.

PARLIAMENTARY NOTES.

TIMBER FOR THE WAR OFFICE.—On the motion for the adjournment on Feb. 18, Mr. W. Young (R., Perthshire, E.) drew attention to the appointment of Mr. Montague Meyer as sole purchasing agent for the timber required by the War Office. In reply to a question to the War Office, he had been told that the value of the timber Mr. Meyer had purchased was £600,000. The arrangement he believed had only been in existence for three months, so that in so short a time Mr. Meyer, having a commission of 2½ per cent., had found himself in pocket to the extent of £15,000. This was an extraordinary arrangement. There were from a dozen to twenty firms with the highest reputation as brokers who would have jumped at the business for a commission of 1 per cent., and would have done it even for a half per cent. He was informed that probably the best timber expert in Great Britain could be got for £2,000 a year at the outside, which meant that a saving of £14,500 of the ratepayers' money could have been effected. Mr. Meyer's stock had also been taken over at an ascertained cost price. There could be no doubt that a good deal of uneasiness existed throughout the country on the question of War Office contracts. Did the War Office pay exorbitant commissions in connection with the purchase of other materials?—Mr. Haslam (R., Monmouth Boroughs) said 2½ per cent. commission on all purchases of timber was exorbitant for transactions of the kind. In addition to this commission, however, he understood Mr. Meyer received a brokerage commission, which brought his total profit to 3½ per cent. on all purchases. What was his nationality? The War Office did not seem to know. The gentleman bore a name which was not encouraging or reassuring, Englishman though he might be.—Mr. Baker thought it a good thing that the matter should be withdrawn from the atmosphere of misstatement in the newspapers, and innuendo in questions in which it had been. The position on the outbreak of war was that the War Office found itself in need of very large quantities of timber, mainly for the huts in the new camps. The Office of Works, which had considerable expert knowledge of the timber trade, in a spirit of pure helpfulness, suggested that they should relieve the War Office of the task of getting the timber. The War Office agreed to the proposal. At that point the actual responsibility of the War Office ceased, and the Office of Works made all further arrangements. The Office of Works made inquiries from leading merchants in the trade to see what timber could be got and at what price. Almost all the answers quoted prices that were excessive and exorbitant. At this stage Mr. Meyer appeared. He was one of those who had been asked to quote. Mr. Meyer suggested that the Government's inquiries were having a disturbing effect on the market, and suggested that the difficulty would be very largely overcome if the Office of Works employed the device of using one single agent, and of purchasing not from merchants at home, but direct from shippers in Sweden. The Office of Works approved the idea, and employed Mr. Meyer on trial as the agent. Mr. Meyer carried out the trial so satisfactorily that the arrangement was continued. It appeared that Mr. Meyer was not only a British subject, but a son and a grandson of British subjects. He was known to the Office of Works previously, and had executed other contracts for the War Office in a satisfactory manner. He had had eighteen years' experience of the trade, and had been in business on his own account for about eight years. His firm had had very considerable dealings. Two other offers were considered by the Office of Works before Mr. Meyer was appointed, but were regarded as less satisfactory. The agreement was that Mr. Meyer was to receive 2½ per cent. on all purchases made by him, but that the Office of Works was to take all discounts or commissions. The statement that brokers through whom he bought received 1 per cent. was, in a sense, true; but that percentage was paid by the seller, and it was only in a very small number of transactions that a broker was employed. The 2½ per cent. commission was not all profit, for a great number of services were rendered by him, such as arranging for the transport of the timber abroad and at home, detailed checking, and conversion into the sizes required. He also had to employ a considerable staff. It was not the case that he was given either room or staff by the Office of Works, but that Office did put a few clerks in his office to check every transaction. It was difficult at this stage to prove that the arrangement had resulted in economy, as a great number of the contracts had not been concluded; but the Office of Works gave the assurance that in every case they had been able to test the purchases by Mr. Meyer had led to economy. When he was given a trial before he was appointed, the quotations from leading merchants averaged £14 10s. a standard, but

Mr. Meyer bought all the quantity wanted at from £10 to £12 a standard. On every occasion on which comparison could be made it had been found that the prices at which Mr. Meyer purchased were more favourable than those offered by the large merchants in the trade. The alternatives to purchase through an agent were direct purchase, which, in view of what occurred, would have been disastrous, or to purchase through a committee. As to the latter, the House of Commons and the public had not constantly urged the Government departments not to put themselves into the hands of rings, and if they had set up a Committee, very likely similar debate would have taken place. After what he had said, anyone who put aside racial and commercial bias would be bound to admit that the contract could not be described as unsatisfactory to the taxpayer. As to the percentage being excessive, he (Mr. Baker) did not think that when these transactions were first undertaken it was contemplated that they would reach the very large figure which they had reached. It was now under consideration in the Office of Works, he believed, whether the arrangement should not, now that the transactions had reached such large dimensions, be modified.—Sir H. Dalziel said he was glad to know this contract was to be modified.—Mr. Beck, representing the Office of Works, said the right hon. gentleman must not misunderstand the position. The Office of Works were asked to prepare wood for the War Office, and to the best of their ability the Office of Works made a good bargain; but it was obvious that what was a handsome payment might become over-handsome as the transaction increased. As there had been an enormous increase the matter was now being reconsidered.—Sir H. Dalziel congratulated the hon. gentleman on the rapidity with which he had assumed the official manner. (Laughter.) The House might take it there was going to be some modification because the Government had no alternative. It was surely a subject for inquiry that a man who was almost a stranger to the War Office should be making at the rate of £60,000 per annum, particularly when taxation was considerable. The House ought to know whether Mr. Meyer was paid commission on his own stock, and who fixed the valuation of that stock.—Mr. Booth (R., Pontefract) rose to continue the discussion, but the hour allotted for discussion of the motion on the adjournment had been exhausted.—On Wednesday last, Mr. Beck (representing the Office of Works), answering Mr. W. Young (L., East Perthshire), said that Mr. Montague Meyer was only paid the agreed commission on the invoice price, and not on the value of his own stock of timber taken over by the Office of Works. The total value was £11,360. He understood that on this transaction, compared with the ruling price of timber, Mr. Meyer lost £2,000, as in the meantime timber had appreciated about 20 per cent.—Sir H. Dalziel (L., Kirkcaldy Burghs) asked the representative of the Office of Works what was the total value of the timber purchased up to date by Mr. Meyer on behalf of the Government; whether he still adhered to the statement that the Office of Works sent out five hundred communications to timber firms asking them to quote before the appointment of Mr. Meyer, and, if so, could he explain why a large number of leading firms in the trade were excluded; could he confirm the statement that Mr. Meyer at no time had a room in the Office of Works, and whether there was any objection to members of the House inspecting the contract made with Mr. Meyer.—Mr. Beck: In reply to the first part of the question, the total value was approximately £600,000. The exact number of communications cannot be stated; but the inquiry I have made shows that stocks and prices were ascertained from two hundred different firms whose names were taken from the directory published by the "Timber Trades Journal." As to the third point, I have no information confirming the statement that a large number of firms were excluded. As regards the fourth point, the answer is "Yes." As regards the fifth point, I shall be happy to show a copy of the contract to any member desiring to see it.—Sir H. Dalziel: Can the hon. gentleman report any progress in the direction of the modification of this contract?—Mr. Beck: There are negotiations proceeding, and so far the arrangement is 2½ per cent. up to £600,000, 2 per cent. between £600,000 and £1,000,000, and 1 per cent. over £1,000,000 (cries of "Oh!") [It was afterwards officially notified that Mr. Beck had inadvertently given the wrong figure for the commission on purchases over £1,000,000, and that he should have said 1½ per cent. instead of 1 per cent.]—Sir H. Dalziel: Saving the country's money! (Hear, hear, and laughter.)

CRAYFORD HOUSING SCHEME.—Mr. Rowlands has asked the President of the Local Government Board whether the Board has sanc-

tioned financial assistance to a housing scheme at Crayford. Mr. Herbert Samuel: The Public Works Loan Commissioners have granted a loan of £48,000 to the Crayford Cottage Society, Limited, towards the erection of 300 cottages at Crayford. The cost of the buildings, including cost of site, roads, etc., is estimated at £71,350, and the weekly rentals of the cottages at 7s. 6d. each. The rates and cost of repairs are to be paid by the Society. As the borrowers are a public utility society, it is not necessary for them to obtain the sanction of the Local Government Board before borrowing from the Public Works Loan Commissioners.

LONDON ELECTRIC SUPPLY BILL WITHDRAWN.—In the House of Commons on Monday, on the motion for the second reading of the London Electric Supply Bill, Mr. Whitley, Chairman of Committees, said that after carefully considering the powers sought by this Bill he had informed the promoters that in his opinion the Bill was not one which, in the present session, the House ought to be called upon to consider. It raised important questions of a public character and of a contentious nature, and the promoters had agreed that the order for the second reading should be discharged, and that the Bill should be withdrawn. Accordingly he proposed a motion to the effect and it was unanimously agreed to.

Mr. Walter Cave, F.R.I.B.A., Past-President of the Architectural Association, is serving his country as Chief Petty Officer, R.N.V.R., Anti-Aircraft Corps.

As a measure of economy, the Chancellor of the Exchequer has decided to stop until after the war all grants in aid of libraries, art-galleries, and museums.

Mr. Frank H. Bromhead, A.R.I.B.A., of Knebworth, has been appointed by the Shephard Urban District Council as architect for the erection of a number of working-class dwellings.

Mr. A. G. Drury, Local Government Board inspector, held an inquiry at Felixstowe on Tuesday as to an application by the urban district council for leave to borrow £4,880 for the extension of the sewage pumping-station and destructor.

The Local Government Board have given their approval to plans for new offices for the urban district council of Shipley. The plans have been prepared by Messrs. Bailey and Anderton, of Shipley and Keighley. The cost is estimated at over £14,000.

"A.A. Notes" states that Mr. T. W. Dowsett, of 61, Chancery-lane, W.C., a member of the Architectural Association since 1910, was killed in the trenches on Jan. 30, while serving, between Ypres and La Bassée, as a private in the Honourable Artillery Company.

At the annual meeting of the Geological Society of London the officers chosen for the ensuing year were Mr. Arthur Smith Woodward, president; Mr. H. H. Benrose, Mr. Clement Reid, Mr. A. Strahan, and the Rev. H. H. Winwood, vice-presidents; Mr. H. H. Thomas and Mr. H. Lapworth, secretaries; Sir Archibald Geikie, foreign secretary; and Mr. B. McNeill, treasurer.

The members of the Province of Quebec Association of Architects have cancelled their annual banquet, and sent a subscription of 850d. to the *Fraternité des Artistes*, France, on behalf of the families of soldiers killed in the war. The association has sustained a great loss by the death of Prof. Doumic, one of its leading members, who was killed fighting with his regiment in France.

The corporation museum and art-gallery at Burton-on-Trent was formally opened on Friday last. A few years ago, when the new courthouse was built in Horninglow-street, the old police-station, occupying the corner block at Station-street and Guild-street, remained vacant until the corporation decided to convert the lower portion into gas and electricity show-rooms, and the upper story into a museum and art-gallery. The capital outlay on the museum and art-gallery was £2,300.

Another town-planning scheme promoted by the Birmingham Corporation was inquired into at the Council House, Birmingham, on Thursday and Friday last, before Mr. Raymond Unwin, F.R.I.B.A., inspector of the Local Government Board. The application was for approval of a town-planning scheme with reference to lands at North Yardley and Stetchford, situated partly within the city and partly within the rural district of Meriden. Mr. E. V. Hiley (town clerk) represented the corporation, and evidence in support of the scheme was given by Mr. H. E. Stilgoe (city surveyor), Ald. Neville Chamberlain, and others.

LEGAL INTELLIGENCE.

PAPWORTH v. BATTERSEA BOROUGH COUNCIL.—In the King's Bench Division on Saturday, Mr. Justice Scrutton and a special jury heard a new trial of this action in pursuance of the order of the Court of Appeal (Lords Justices Buckley, Phillimore, and Pickford), which held that the original hearing before Mr. Justice Horridge was not satisfactorily tried. The original trial before Mr. Justice Horridge and a common jury (when the plaintiff was awarded £1,961 with costs) was reported in our issue of December 26, 1913 (p. 922, Vol. CV.). The plaintiff alleged that while she was cycling in Lombard-road, Battersea, in January, 1913, she rode over a sewer gully which was in a dangerous state of repair, due to the negligence of the defendants, whose property it was, and that she was thrown from her bicycle, and a cart passed over her, permanently incapacitating her. We recorded the appeal by the borough council in our number for Nov. 13, 1914 (p. 637, Vol. CVII.). At the rehearing on Saturday, the jury answered certain questions in favour of the plaintiff, and assessed damages at £756; but Mr. Justice Scrutton, in giving judgment on questions of law, said the plaintiff must fail, because she had not proved misfeasance on the part of the defendants. In his judgment Mr. Justice Scrutton remarked that the point arose that the present defendants were not the persons who constructed the grid, but were two removes from the original constructors. The defendants were the successors of the vestry of the parish of St. Mary, Battersea, who succeeded the Wandsworth District Board of Works; but under the Act of 1888, which turned the Board of Works into the vestry, there were no express words transferring liabilities. Mr. Justice Horridge decided that in law the liability was not transferred. All that could therefore be said was that the Wandsworth Board of Works put down a dangerous grid, and their successors had done nothing to alter it. Doing nothing on the part of a road authority was not actionable. Consequently, assuming that it was the action of the road authority, the plaintiff must fail because she did not establish any misfeasance by the present defendants, or that there had been transferred to them any misfeasance by the Board of Works. In spite of the finding of the jury, ought he to find that if there had been default it was a default as sewer authority? He did not think there was any finding of negligence as sewer authority. He regarded the finding of the jury as showing that, though there was a default, it was not one which reasonable care could have avoided. He also thought there was evidence on which the jury could find that this was an act done as the road authority. The findings of the jury, therefore, led to a verdict for the defendants. It was unsatisfactory that there should be this difference between the liability of the two authorities, and the remedy was Parliamentary interference to put the sewer authority on the same level as the road authority. Judgment was accordingly entered for the defendants, with costs of both trials and of the appeal.

LIBEL ACTION BY A MASTER PAINTER.—At Shropshire Assizes on Thursday and Friday in last week, Mr. Justice Avory and a special jury heard an action in which Councillor J. H. Perks, master painter and decorator, of Shrewsbury, sought to recover damages for alleged libel against Councillor John Robert Morris, editor and proprietor of an advertising paper issued gratis at Shrewsbury, called "The Shrewsbury Literary and Commercial Circular." The alleged libels were in regard to certain statements and notices of motion by the defendant for the town council meetings which appeared in defendant's paper, and came to be known and referred to by defendant in his paper as "The now known case of Larnac stealing," and in connection with it defendant published in his paper in advance of the council meeting the following notice of motion: "That this council regrets to learn that it is possible for employees to take material in large quantities with the knowledge of the officials, and to use such material in carrying out work on private property of members of this council without such material being paid for or entered in the council's books; they regret to find that such material was so taken and used for Councillor John Perks, and this council considers that gentlemen should be requested to resign his seat." In examination in chief, defendant denied imputing any dishonesty to Mr. Perks in what he had written. The jury gave judgment for plaintiff for £200 and costs. Defendant was then put into the box to prove in regard to means, and his counsel appealed for a stay of execution on the ground that the revenue from defendant's paper had fallen off since the outbreak of the war. The Judge, however, gave leave to issue execution.

E. W. CRICKMAY, ARCHITECT AND SURVEYOR. At the London Bankruptcy court on the 17th inst. the discharge was granted,

subject to a suspension of six months, of Ernest William Crickmay, described as late of 9, Mitre-court Chambers.

MODERN TRAFFIC ON BRIDGES.—Sharpness New Docks Co. v. the Attorney-General at the Relation of the Corporation of Worcester.—The Lord Chancellor and Lords Dunedin, Atkinson, Parker, and Parmoor, sitting in the House of Lords on Friday, delivered judgment in an appeal by the Sharpness New Docks and Gloucester and Birmingham Navigation Company against an order of the Court of Appeal in favour of the present respondents, which varied and partially reversed a decision of Mr. Justice Phillimore, and declared that the local Act of 1791, which provided that all bridges required to carry a highway over the canal (constructed in 1812, and now owned by the appellants) should from time to time be supported, maintained, and kept in sufficient repair by the canal company or their successors, created an obligation to maintain and keep in repair such bridges according to the requirements of the present day. During the arguments it was stated that there were hundreds of bridges all over the country which had been constructed under local Acts containing similar conditions as to repairs as the local Act now under consideration, and, therefore, that the decision was one of general importance. The question at issue was whether the appellants under section 61 of the statute were bound to keep these bridges in such a state of repair as to be sufficient to bear the ordinary traffic which might reasonably be expected to pass over the bridges, having regard to the present needs of the district, or whether their only liability was to keep the bridges in such a state of repair as to be fit to carry the ordinary traffic at the time when the bridges were constructed. Mr. Justice Phillimore adopted the latter construction, and made a declaration accordingly; but his decision was reversed by the Court of Appeal (Lords Justices Vaughan Williams, Kennedy, and Swinfen Eady), who decided that the appellants were liable to maintain the bridges so as to bear the ordinary traffic of the district as existing at the present time. The Lord Chancellor, in moving that the appeal should be allowed, expressed his dissent from the view taken by the Court of Appeal that the liability was one to maintain and repair not merely for a traffic of the character passing over the road a hundred years ago; but at a standard that would take the present-day traffic. The decision in favour of the appellants given by Mr. Justice Phillimore, with some slight variation as to the form of the declaration, would therefore be restored, the appellants to have their costs in this House and in the Court of Appeal. The other Lords gave judgment to the same effect.

THE RATING OF LONDON TRAMWAYS.—LONDON COUNTY COUNCIL v. ISLINGTON ASSESSMENT COMMITTEE.—In the House of Lords on Monday, before the Lord Chancellor and Lords Atkinson, Parker, Sumner, and Parmore, a decision was intimated in this appeal by the London County Council from an order of the Court of Appeal discharging a rule nisi for a mandamus. The appellants had requisitioned the Assessment Committee of Islington asking for the appointment of a valuer, alleging that they had a prima facie case for a reassessment of their tramways, there being evidence that the competition by motor buses had particularly affected them, and that they were entitled to a provisional assessment. Their requisition was refused. The rule was then applied for, and was made absolute by the Divisional Court; but their decision was reversed by the Court of Appeal, and the rule discharged. The Lord Chancellor now stated that their Lordships were of opinion that the appeal should be allowed. At a later date their lordships would express a view upon the construction of the statute which would guide the Islington Assessment Committee in dealing with the case. They would then deal also with the question of costs.

Sergt.-Major H. P. G. Maule, Hon. Artillery Company, F.R.I.B.A., the late Master of the Architectural Association Schools in Tufton-street, has been promoted on the field to commissioned rank.

The death took place on Friday last, at Stockton-on-Tees, at the age of sixty, of Mr. M. H. Sykes, borough engineer of that town since 1898, previous to which he was borough surveyor at Morley. He leaves a widow and three children.

Mr. G. P. Robertson, engineer to the Darjeeling Municipality, was drowned three weeks since while on the initial stage of what was to be an extended survey of the Rungeet and Teesta rivers for the purpose of choosing a site for a new hydraulic power station.

Our Office Table.

The electors to the Slade Professorship of Fine Art have re-elected Mr. Edward Schroeder Prior, M.A., A.R.A., F.R.I.B.A., Honorary Fellow of Gonville and Caius College, into the said professorship. Mr. Prior was one of the founders of the Art Workers' Guild, of which he was Master in 1906. He has been secretary of the Arts and Crafts (London) Exhibition Society since 1902, and architect to Cambridge University, Harrow School, and Winchester College. His publications include "The History of Gothic Art in England," "The Cathedral Builders in England," and "The Mediaeval Figure Sculpture of England." In his undergraduate days he won many successes in the athletic field, particularly in jumping.

Piqued by their failure to hack their way towards Paris, the Germans have this week recommenced the bombardment of Rheims Cathedral, an operation which has no military purposes to excuse it, but is a fresh example of crass pigghiness. The upper part of the nobly-proportioned north-western tower has been greatly injured, and the magnificent quadripartite vaulted roof of the main fabric, which had hitherto remained intact, although the external lead covering was destroyed in September, has been pierced in numerous places, and the north arcade and its supporting columns have been demolished here and there. Indignation is wasted on the miscreants who are directing these operations. When a dog goes mad efforts should be concentrated on choking him silently and speedily.

A series of six lectures on "The Architecture of Belgian Towns" will be delivered at University College on Thursdays, at 5.30 p.m., beginning on March 4. The lectures will be respectively as follows:—

March 4, M. Victor Horta, Director of the Academy of Fine Arts, Brussels, on "Architecture in Belgium since 1840."

March 11, M. C. F. Caluwaerts on "A General Review of Belgian Towns—Brussels, Malines, and Louvain."

March 18, M. Portielje, Honorary Secretary of the Royal Society of Architects of Antwerp, on "Town Planning in Antwerp, Past and Future."

May 6, Mr. Arthur Stratton, F.R.I.B.A., F.S.A., on "Bruges and Ypres."

May 13, Mr. P. Abercrombie, M.A., on "Brussels."

May 20, Mr. P. Abercrombie, M.A., on "Brussels."

The lectures will be public. Tickets of admission for the whole course, or for separate lectures, can be obtained on sending a stamped addressed envelope to the Secretary, University College, London.

An exhibition of pictures and lace is being held at the Grafton Galleries, London, from Feb. 25 to March 30, 1915, and the entrance money will be divided equally between the Queen's Work for Women Fund and the Belgian Relief Fund. The lace section contains a loan collection of old and rare specimens of English and foreign lace. In addition, there is a special Belgian collection, with lace on sale, for the benefit of the Belgian workers. Some unique specimens have been brought from Brussels by M. Paul Lambotte. The picture section consists of the works of the members of the club and especially invited artists. Admission 1s.

One of the features of the town-planning schemes of the Edinburgh Corporation for an area in the Murrayfield and Ravelston district, threatens the demolition of Murrayfield House, which was the Old Barony of the Nisbets of that ilk. It is a fine specimen of Early 17th-Century domestic architecture. The estate of Nisbet was acquired by Mr. Archibald Murray of Cringalty, a scion of the Murrays of Blackbarony, early in the 18th century, who renamed the property Murrayfield. His son Alexander was raised to the Bench, assuming the title of Lord Henderland, and figures in Kay's Edinburgh portraits. The east wing was probably added by him, and is a good example of the Early Adam style. The present tenants, Miss Chalmers and the Hon. Constance Shore, who have no personal material interest in the matter, have taken the trouble, however, to send out a circular calling attention to the threatened destruc-

tion of this fine old house, and asking if, for æsthetic and antiquarian reasons, it cannot be saved. They state that Sir Archibald Campbell, Bart., as proprietor, would be ready to fall in with any amended plan which might be brought forward by the town council for carrying the new road northward without sacrificing Murrayfield House. The threatened demolition of the mansion has raised a storm of protests from Edinburgh archaeologists and architects, including Prof. Baldwin Brown, and it is asked why, if the road cannot be diverted, should not the house be bodily transplanted to an adjoining site.

In order to minimise the risk to arbitrators of arbitration proceedings being abandoned and awards not taken up, the Royal Institute of British Architects thinks it desirable to point out to its members that it is not inconsistent with professional etiquette for them, before entering on a reference, to demand an undertaking from both or either of the parties to take up the award within a time to be specified, and in any event to pay the arbitrator's fees. Also, in cases where the arbitrator considers it desirable, it is quite permissible for him to require a payment in advance on account of his charges.

A portrait of Sir G. Hayter Chubb, painted by Mr. Arthur Nowell, was presented to the Leys School at an "at home" given by Dr. Barber, the headmaster, and Mrs. Barber, at the Hotel Métropole, on Friday last, on behalf of the Old Leysian Union. As treasurer and chairman of the governing body Sir G. Hayter Chubb has served the school for twenty-three years, or rather more than half the period of its existence, the school having been founded forty years ago. The portrait is intended as a memorial of his services, and is the gift of Mr. Henry Holloway, who is also a member of the governing body. Dr. Barber received the portrait from Mr. Holloway on behalf of the school, and Sir G. Chubb acknowledged the compliment paid to him. Among those who accepted invitations to the gathering were Sir George Truscott, Sir G. and Lady Houston Reid, Lady and Miss McMillan, Sir Aston and Lady Webb, and the Rev. and Mrs. F. B. Meyer.

At the last meeting of the Kent County Council the asylums committee reported that the contractors having refused to be bound by their tender for the new bakery at Chartham Asylum, they had obtained fresh tenders and asked permission to accept that of Mr. G. Browning, of Canterbury, for £4,337, in the place of the original tender for £4,100 by Messrs. Elliott and Co. This was agreed to, and the committee were instructed to employ an architect to prepare plans and obtain tenders for a house for the senior assistant medical officer at Chartham Asylum, to be erected in the asylum grounds at a cost not exceeding £1,500. The bridges and roads committee reported that tenders for hard road material had been received from twenty-eight contractors. The average price per ton in the tenders recommended was 13s. 5.27d., showing an increase of 1s. 11.8d. over last year's prices, which were also in advance of the prices of the two preceding years. A larger quantity of Kentish rag tarred macadam was advertised for than had been usual in previous years, and twenty contractors had responded. The committee recommended that tenders amounting to 35,612 tons be accepted for the quantities and at the prices stated, and that contracts be ordered to be sealed. The average cost (including carriage to nearest place of user) was 12s. 7.2d. per ton, an increase of 7.28d. over last year. The total amount of material now recommended for purchase was 95,062 tons or yards, as against 96,076 tons for the current year. The total excess of expenditure on roads over the estimates for the year had been £3,796. A long discussion took place on the following resolution, moved by Mr. Tapp: "That, in the opinion of the council, the time has arrived when the duties of the county architect should be undertaken by a person devoting the whole of his time to the office." Mr. Tapp said that they were paying Mr. F. W. Ruck £600 a year, and yet

allowed him to continue private practice, and voted him an additional sum of £2,600 as commission on the new county buildings at Maidstone. The motion was defeated by 17 votes to 15; but a second resolution, proposed by Mr. Tapp: "That the bridges and roads committee consider and report to the council as to the revision of the duties and salaries of the county architect and his assistant" was carried.

At the quarterly meeting of the Hants County Council the the asylum committee reported that they had received an application from Mr. Thomas Rowbotham, the contractor for the superstructure of the new asylum at Park Prewett, for an allowance in respect of the increased cost in obtaining timber. Mr. Rowbotham, in order to avoid stopping the asylum works, was compelled to order timber elsewhere, and claimed the extra cost, which amounted to £1,070 on the main asylum, from the timber merchants. The question whether he would be able to recover this was doubtful, and, in the difficult circumstances, all the parties asked the committee to assist them in effecting a compromise. The extra cost of timber on the smaller buildings would amount to about £600, making a total additional outlay for timber of upwards of £1,600. The committee conferred with the contractor, and agreed to make an additional payment of £800 to cover the effect of the war in regard to increase of prices, not only of timber, but also of all other materials, and on the strict understanding that no further claim was made in this respect. The report was approved.

The seventeenth abstract of Labour Statistics for the United Kingdom, giving a summary for fifteen years—1899-1913—has just been issued by the Board of Trade. It shows the percentage of carpenters and joiners in trade-unions who were unemployed rose to the highest point in 1908 and 1909 (11.6 and 11.7), and sank to 3.3 in 1913-14. The time rates of wages rose in the London building trades by October 1, 1914, to 11½d. per hour for bricklayers, masons, carpenters, and joiners and plasterers, 1s. an hour for plumbers, and 9½d. to 10d. for painters; 8d. per hour was received by bricklayers' and plasterers' labourers. The full week of summer labour was fifty hours in all the building trades in London, and also in Bristol, Dublin, Dundee, Edinburgh, Hull, Middlesbrough, Newcastle-on-Tyne, South Shields, and Sunderland; in a few provincial towns the summer week was half an hour or an hour less, but in most considerably longer hours were worked, the longest week being 56½ hours—at Brighton. At the end of 1913 the trade-unions in the building trades had a total membership of 248,647 in sixty-six unions.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Glasgow Architectural Craftsmen's Society. Discussion on "Cheap Cottages." 8 p.m.

Leicester and Leicestershire Society of Architects. "The Place of Iron in Architecture," by Rev. E. I. Fripp.

MONDAY.—Victoria and Albert Museum. "The Tower of London," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.

Royal Institute of British Architects. Business Meeting. Election of Royal Gold Medallist. 8 p.m.

Royal Society of Arts. "Motor Fuel," Fothergill Lecture No. 3, by Prof. Vivian B. Lewis. 8 p.m.

TUESDAY.—Royal Society of Arts. "The Northern Territory of Australia: Past, Present, and Future," by David Lindsay. 4.30 p.m.

Architectural Association of Ireland. "Some Cities on the Continent," by Hubert Briscoe. 15, Frederick-lane, Dublin. 8 p.m.

WEDNESDAY.—Royal Archaeological Society. "The Sciapas in English Church Carvings," by G. C. Druece, F.S.A. 4.30 p.m.

Royal Society of Arts. "Shakespeare's Profession," by William Poel. 8 p.m.

Institute of Sanitary Engineers. "The Drainage of Hamilton, Bermuda," by G. Bertram Kershaw, M.I.C.E. 8 p.m.

THURSDAY.—British Museum. "Early Christian Churches in Rome," by Banister F. Fletcher. 4.30 p.m.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

	Per standard.	
Yellow Pine Deals, 1st quality	£55 0 0 to £57 0 0	
" " 2nd "	53 0 0 " 55 0 0	
White Deals: First	22 0 0 " 24 0 0	
" " Seconds	20 0 0 " 22 0 0	
Per cubic foot.		
Oak: Austrian Wainscot	£0 10 6 to £0 12 6	
Teak: Burmese, per load, 50ft.	28 0 0 " 34 0 0	
Teak: Java, per load, 50ft.	24 0 0 " 27 0 0	

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£8 10 0 to £8 12 6	
Wrought-Iron Girder Plates	8 10 0 " 10 0 0	
Steel Girder Plates	8 17 6 " 9 17 6	
Bar Iron, good Stuffs	6 5 0 " 8 10 0	
Do., Lowmoor, Flat, Round, or Square	22 0 0 " 0 0 0	
Do., Welsh	5 15 0 " 5 17 0	
Boiler Plates, Iron—		
South Staffs	8 0 0 " 8 15 0	
Best Sneydhill	9 0 0 " 9 10 0	
Angles 10s., Tees 20s. per ton extra.		
Builders' Hoop Iron, for bonding, &c., 28 15s. to £9.		
Ditto galvanised, £14 to £15 10s. per ton.		

	No. 18 to 20.	No. 22 to 24
Galvanised Corrugated Sheet Iron—		
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0 " £13 10 0	
Best ditto	13 10 0 " 14 0 0	

	Per ton.	Per ton.
Cast-Iron Columns	£6 17 6 to £8 10 0	
Cast-Iron Stanchions	6 17 6 " 8 10 0	
Rolled-Iron Fencing Wire	8 5 0 " 8 10 0	
Rolled-Steel Fencing Wire	7 5 0 " 7 10 0	
Galvanised	8 15 0 " 9 5 0	
Cast-Iron Sash Weights	5 15 0 " 6 0 0	
Cut Floor Brads	10 15 0 " —	
Corrugated Iron, 24 gauge	16 0 0 " —	
Galvanised Wire Strand, 7 ply.		
14 B.W.G.	14 5 0 " —	

	0 to 8	10	11	13	B.W.G.
B.B. Drawn Telegraph Wire, Galvanised—					
£10 10s. £10 15s. £11 0s. £11 5s. £11 15s. per ton.					

	£6 15 0 to	£7 2 6
Cast-Iron Socket Pipes—		
3in. diameter	6 10 0 " 6 12 6	
4in. to 6in.	6 17 6 " 7 2 6	
7in. to 24in. (all sizes)	6 17 6 " 7 2 6	
[Coated with composition, 5s. 0d. per ton extra.		
turned and bored joints 5s. per ton extra.]		

	Per ton.	Per ton.
Pig Iron—		
Cold Blast, Lillieshall	80s. 0d. to 127s. 6d.	
Hot Blast, ditto	87s. 0d. " 97s. 0d.	
Wrought-Iron Tubes and Fittings—Discount off		
Standard Lists f.o.b. (plus 2½ per cent.)—		
Gas-Tubes	72½ p.c.	
Water-Tubes	66½ " "	
Steam-Tubes	65 " "	
Galvanised Gas-Tubes	60 " "	
Galvanised Water-Tubes	56½ " "	
Galvanised Steam-Tubes	50 " "	

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	£25 0 0 to	
" " Country	26 0 0 " —	
Lead Barrel Pipe, Town	26 0 0 " —	
" " Country	27 0 0 " —	
Lead Pipe, Tinned inside, Town	27 0 0 " —	
" " Country	28 0 0 " —	
Lead Pipe, Tinned inside and outside	29 10 0 " —	
" " Country	30 10 0 " —	
Composition Gas-Pipe, Town	28 0 0 " —	
" " Country	29 0 0 " —	
Lead Soil-pipe (up to 4in.) Town	28 0 0 " —	
" " Country	29 0 0 " —	
[Over 4in. £1 per ton extra.]		
Lead, Common Brands	17 17 6 " £18 12	
Lead Shot, in 28lb. bags	24 15 0 " —	
Copper Sheets, sheathing & rods	84 0 0 " 84 10 0	
Copper, British Cake and Ingot	70 10 0 " 71 10 0	
Tin, English Ingots	168 0 0 " 180 0 0	
Do., Bars	169 0 0 " 181 0 0	
Pig Lead, in lowt. Pigs (Town)	18 16 3 " 19 2 6	
Sheet Lead, Town	24 10 0 " —	
" " Country	25 10 0 " —	
Genuine White Lead	30 15 0 " —	
Refined Red Lead	29 0 0 " —	
Sheet Zinc	69 0 0 " —	
Old Lead, against account	19 0 0 " —	
Tin	9 15 0 " —	
Cut nails (per cwt. basis, ordinary brand)	0 12 9 " —	
* For 5 cwt. lots and upwards.		

SLATES.

	in.	in.	£ s. d.	per 1,000 of
Blue Portmadoc ..	20 × 10	12 12 6	1,200 at r. strn	
" " ..	16 × 8	6 12 6	" "	
Blue Bangor	20 × 10	13 2 6	" "	
" " ..	20 × 12	13 17 6	" "	
First quality	20 × 10	13 0 0	" "	
" " ..	20 × 12	13 15 0	" "	
" " ..	16 × 8	7 5 0	" "	
Eureka unfading green	20 × 10	15 17 6	" "	
" " ..	20 × 12	18 7 6	" "	
" " ..	18 × 10	13 5 0	" "	
" " ..	16 × 8	10 5 0	" "	
Permanent Green ..	20 × 10	11 12 6	" "	
" " ..	18 × 10	9 12 6	" "	
" " ..	16 × 8	6 12 6	" "	

BRICKS.

(All prices net.)

First Hard Stocks	£1 15 0	per 1,000	alongside, i
Second Hard Stocks	1 11 0	"	" (river.
Mild Stocks	1 9 0	"	"
Picked Stocks for			" delivered
Facings	2 5 0	"	at rly. stn.
Flettons	1 14 0	"	"
Pressed Wire Cuts	1 18 0	"	"
Red Wire Cuts	1 14 0	"	"
Best Fareham Red	3 12 0	"	"
Best Red Pressed			"
Ruabon Facing	5 0 0	"	"
Best Blue Pressed			"
Staffordshire	3 15 0	"	"
Ditto Bullnose	4 0 0	"	"
Best Stourbridge			"
Firebricks	4 0 0	"	"
2 1/2 in. Best Red Ac-			" (Net, delivered in
cringing Plastic	4 10 6	"	full truck loads
Facing Bricks			in London.
3 1/8" Accrington Best Red Plastic Facing per 1,000			
Bricks	£2 10 0		
3 1/8" ditto Second Best Plastic ditto	2 2 6		
Ditto Ordinary Secondary Bricks	1 11 3		
Ditto Plastic Engineering Bricks	1 17 6		
Sewer Arch Brick not more than 3 1/8 in			
thickest part	2 0 0		
3 1/8" Chimney Bricks fit for outside work	2 6 0		
3 1/8" ditto ditto through and through	2 0 0		
3 1/8" Beaded, Ovolo and Bevel Jamb; Octa-			
gons; 2 1/2" and 3" radius Bullnoses; Stock			
patterns	3 7 6		
Accrington Air Bricks, 9" x 2 course deep, each	0 0 6		
Ditto ditto 9" x 1 course	0 0 3		
Accrington Camber Arches:—			
3 course deep, 4 1/2" soffit, per foot opening	0 1 7		
1 ditto ditto ditto ditto ditto	0 1 1		
2 ditto ditto ditto ditto ditto	0 2 9		
3 ditto ditto ditto ditto ditto	0 2 6		
4 ditto ditto ditto ditto ditto	0 2 3		
5 ditto ditto ditto ditto ditto	0 3 8		
6 ditto ditto ditto ditto ditto	0 4 1		

*Net free on rail, or free on boat at works.

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

White, Ivory, and	Best.	Buff, Cream, Other	Second
Best.	Seconds.	& Bronze. Colours.	Colours.
Stretchers—			
£12 7 6	£10 17 6	£13 17 6	£17 17 6
11 7 6	10 7 6	13 7 6	17 7 6
Quoins, Bullnose, and 4 1/2 in. Flats—			
15 17 6	14 17 6	17 17 6	21 7 6
Double Stretchers—			
17 17 6	16 7 6	20 17 6	24 7 6
Double Headers—			
14 17 6	13 7 6	17 17 6	21 7 6
One side and two ends, square—			
18 17 6	17 17 6	21 17 6	26 7 6
Two sides and one end, square—			
19 17 6	18 7 6	22 17 6	26 17 6
Splays and Squints—			
17 7 6	15 7 6	21 17 6	24 7 6
Plinth and Hollow Bricks, Stretchers and Headers—			
5d. each	4d. each	6d. each	5d. each
Double Bullnose, Round Ends, Bullnose Stops—			
5d. each	4d. each	6d. each	5d. each
Rounded Internal Angles—			
4d. each	3d. each	5d. each	4d. each

MOULDED BRICKS.

Stretchers and Headers—				
8d. each	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—				
1 1/2 each	1 1/2 each	1 1/2 each	1 1/2 each	1 1/2 each
Sill Bullnose, Stretchers, and Headers—				
5d. each	4d. each	6d. each	5d. each	5d. each
Majolica or Soft Glazed Stretchers and				
Headers				£23 17 6
" Quoins and Bullnose				27 17 6
Compass bricks, circular and arch bricks				
of single radius 2 1/2 per 1,000 over above				ing exceed-
list for their respective kinds and colours				ing 9in.
Camber arch bricks, any kind or colour,				by 4 1/2 in.
18. 2d. each				by 2 1/2 in.
Stretchers cut for Closers and Nicked Double				
Headers, £1 per 1,000 extra.				

* These prices are carriage paid in full truck loads to London Stations.

Thames Sand	s. d.
Pit Sand	7 6 per yard, delivered
Thames Ballast	7 0 " "
	6 0 " "

Best Portland Cement..... 36 0 to 4 0 Per ton.
Ground Blue Lias Lime..... 21 0 per ton delivered

Exclusive of charge for sacks.

Grey Stone Lime..... s. d. s. d. Per yard,
13 6 to 14 0 delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at
railway station.

STONE.*

Red Mansfield, in blocks.....per foot cube	£0 2 4
Darley Dale, ditto	" 0 2 3
Red Corsehill, ditto	" 0 2 2
Closeburn Red Freestone, ditto	" 0 2 0
Ancaster, ditto	" 0 1 10
Greenshill, ditto	" 0 1 10
Beer, ditto	" 0 1 6
Chilmark, ditto (in truck at	
Nine Elms)	" 0 1 10 1/2
Hard York, ditto	" 0 2 0
Do. do. 6in. sawn both sides,	
landings, random sizes.....per foot sup.	0 2 8
Do. do. 3in. slab sawn two	
sides, random sizes	" 0 1 3

* All F.O.B. London.

Bath Stone, delivered on road	£ s. d.
waggons, Paddington Depot per foot cube	0 1 7 1/2
Ditto, ditto, Nine Elms Depot	" 0 1 9 1/2
Beer Stone, delivered on rail	" 0 1 1
at Seaton Station.....	
Ditto, delivered at Nine Elms	" 0 1 7 1/2
Station.....	
Portland Stone, in random blocks of 20ft. average:—	
Delivered on road waggons	Brown White
at Paddington Depot,	White Bed. Base Bed.
Nine Elms Depot, or	Per foot cube.
Pimlico Wharf.....	£0 2 3 ... £0 2 4 1/2

TILES.

Plain red roofing tiles.....	s. d.	Divrd. at
Hip and Valley tiles.....	42 0	per 1000 ry.sn.
Broseley tiles.....	3 7	per doz.
Ornamental tiles.....	50 0	per 1000
Hip and Valley tiles.....	52 6	"
Ruabon red, brown, or brindled	4 0	per doz.
ditto (Edwards).....	57 6	per 1000
Ornamental ditto.....	60 0	"
Hip tiles.....	4 0	per doz.
Valley tiles.....	3 0	"
Selected "Perfecta" roofing		
tiles: Plain tiles (Peake's).....	46 0	per 1000
Ornamental ditto.....	48 6	"
Hip tiles.....	3 10 1/2	per doz.
Valley tiles.....	3 4 1/2	"
"Rosemary" brand plain tiles.....	48 0	per 1000
Ornamental tiles.....	50 0	"
Hip tiles.....	4 0	per doz.
Valley tiles.....	3 8	"
Staffordshire (Hanley) Reds or		
brindled tiles.....	42 6	per 1000
Hand-made sand-faced.....	45 0	"
Hip tiles.....	4 0	per doz.
Valley tiles.....	3 6	"
Harshill "brand plain tiles,		
sand-faced.....	45 0	per 1000
Pressed.....	42 6	"
Ornamental ditto.....	47 6	"
Hip tiles.....	4 0	per doz.
Valley tiles.....	3 6	"

OILS.

Rapeseed, English pale, per tun	£28 15 0	to £29 5 0
Ditto, brown.....	26 15 0	" 27 5 0
Cottonseed, refined.....	29 0 0	" 30 0 0
Olive, Spanish.....	39 10 0	" 40 0 0
Seal, pale.....	21 0 0	" 21 0 0
Coconut, Cochin.....	46 0 0	" 46 10 0
Ditto, Ceylon.....	42 10 0	" 43 0 0
Ditto, Mauritius.....	42 10 0	" 43 0 0
Palm, Lagos.....	32 5 0	" 33 5 0
Ditto, Nut Kernel.....	35 0 0	" 35 10 0
Oleine.....	17 5 0	" 19 5 0
Sperm.....	30 0 0	" 31 0 0
Lubricating, U.S.....per gal.	0 7 0	" 0 8 0
Petroleum, refined.....	0 6 0	" 0 6 0
Tar, Stockholm.....per barrel	1 6 0	" 1 10 0
Ditto, Archangel.....	0 19 6	" 1 0 0
Linseed Oil.....per gal.	0 3 1 1/2	"
Baltic Oil.....	0 3 2	"
Turpentine.....	0 3 7	"
Patty (Genuine Linseed		
Oil.....per cwt.	0 9 0	"
Pure Linseed Oil		
"Stority" Brand.....	0 9 0	"

GLASS (IN CRATES).

English Sheet Glass: 15oz.	21oz.	26oz.	32oz.
Fourths.....	5 1/2 d.	5 1/2 d.	6 1/2 d.
Thirds.....	5 1/2 d.	6 1/2 d.	8 1/2 d.
Fluted Sheet.....	4 1/2 d.	5 1/2 d.	"
Hartley's English Rolled		3/16 in.	1/4 in.
Plate.....	3d.	3 1/2 d.	4d.
Figured Rolled and Repoussine.....	4 1/2 d.	"	6d.

VARNISHES, &c.

Fine Pale Oak Varnish.....	Per gallon.
Pale Copal Oak.....	£0 8 0
Superfine Pale Elastic Oak.....	0 10 6
Fine Extra Hard Churn Oak.....	0 12 6
Superfine Hard-drying Oak, for seats of	
churches.....	0 14 6
Fine Elastic Carriage.....	0 12 9
Superfine Pale Elastic Carriage.....	0 16 0
Fine Pale Maple.....	0 10 0
Finest Pale Durable Copal.....	0 18 0
Extra Fine French Oil.....	1 1 0
Eggshell Flattening Varnish.....	0 18 9
White Copal Enamel.....	1 4 9
Extra Pale Paper.....	0 12 0
Best Japan Gold Size.....	0 10 0
Best Black Japan.....	0 16 0
Oak and Mahogany Stain.....	0 9 0
Brunswick Black.....	0 8 0
Berlin Black.....	0 16 0
Knotting.....	0 10 0
French and Brush Polish.....	0 10 6

The Local Government Board have sanctioned the borrowing by the corporation of Nottingham of £34,536 for the Carter-gate improvement scheme.

The borough engineer of Lewisham, in reporting upon the exceedingly high price of wood, suggests that no roads should be wood-paved this year, but that worn-out roads should be repaired with bituminous-bound macadam or tar-macadam.

Lord Bessborough, presiding on Wednesday at the meeting of the London, Brighton, and South Coast Railway Company, announced that the Channel traffic at Southampton and Folkestone had now become so heavy that they were compelled to look out for some other port. Plans and estimates were under consideration, and they hoped the work would soon be proceeded with.

TRADE NOTES.

A brickwork basement at the Queen's Hotel, Eastbourne, has just been converted into a tank. The brickwork was given a Pulloed cement lining, and now holds several thousand gallons of water. The architect reports that not a sign of damp has shown through.

Under the direction of Messrs. Mence and Finn, architects, 11, St. Peter's-street, St. Albans, Herts, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilator and air-inlets, has been applied to two new wards, St. Albans Union Workhouse Infirmary, Herts.

Mr. Thomas Small, of Old Cumnock, has been appointed burgh surveyor of Dunbar.

The new Roman Catholic Church of St. Patrick, Ryhope, was opened on Tuesday. It is built of brick, has seating accommodation for 350, and has been erected by Mr. J. W. White, contractor, of Sunderland. It adjoins the rectory in Smith-street.

At a meeting of the Senate of the University of London held on Wednesday, an offer from Sir William Lever to provide annual prizes of £15 and £10 for students in the Department of Town Planning, and the same for students in the School of Architecture, was accepted with thanks.

The International Society of Sculptors, Painters, and Gravers has admitted the following candidates to membership: Ethel Walker, Daniel Wehrschmidt, Louis Sargent, J. D. Revel, A. St. John Partridge, Laura Knight, G. Spencer Pryse, George Coates, Howard Somerville, Edith Rackham, Fred Mayor, Oswald Birley, Lily Blatherwick, and Constance Rea.

At a meeting of the executive council of the County Councils Association at the Guildhall, Westminster, on Wednesday, it was resolved that the Treasury should be urged to consent to the Road Board continuing its annual grants towards road-reconstruction and road-crust improvement in the counties, and that the Chancellor of the Exchequer should be asked to receive a deputation on the subject.

Mr. C. H. Eyles, F.S.I., on behalf of the Local Government Board, held an inquiry at Prudhoe-on-Tyne on Tuesday evening in reference to the application of the urban district council for sanction to borrow £6,000 for the purchase of land and the erection of working-class dwellings. The site in view is eight acres at Edgewell, where the council propose to build thirty houses, of which plans were submitted.

FOR**Olivers'****Seasoned****Hardwoods,**

TO—

WM. OLIVER & SONS, Ltd.,**120, Bunhill Row, London, E.C.****TENDERS.**

* * Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ABERGAVENNY.—For alterations and additions to the Abergavenny police court and station, for the Monmouth County Standing Joint Committee. Mr. W. Tanner, county surveyor:—

Read, C. H., Newport	£1,900 0 0
Moon, R. W., Newport	1,897 0 0
Gough Bros., Cardiff	1,868 0 0
Poulton & Whiting, Pontnewydd	1,860 0 0
Leadbetter, G. F., Newport	1,837 0 0
Thomas, J. G., and Sons,	
Abergavenny	1,779 0 0
Watkins, W., Llangynidr	1,736 10 0
Williams, J., Llangollen	1,710 19 2
Boyd, J., Llanddewi Rhydorch	1,545 0 0
Lewis, W. P., and Co., Hereford	1,530 0 0
Foster and Hill, Abergavenny	1,495 0 0
Horsington Bros., Abergavenny	1,445 0 0

* Accepted.

ASHBY.—For building Ashby school. Lines:—	
Thompson, H. J., Scunthorpe	£4,515 0 0
Scarborough, F., Lincoln	6,353 16 4
Kettlewell, P. T., Hull	6,297 0 0
Horton, S. R., and Sons, Ltd.,	
Lincoln	6,295 0 0
Jarvis, J., and Sons, Ltd., London	6,280 0 0
Swaby and Walsham, Grimsby	6,220 0 0
Fieh, T., and Sons, Nottingham	6,191 0 0
Wright, W., and Son, Ltd.,	
Lincoln	6,115 0 0
Thornhill Bros., Lincoln	6,056 1 3
Pumfrey, B., Gainsborough	5,750 0 0
Long, T., and Sons, Nottingham	5,600 0 0
Gilbert and Hall, Nottingham	5,520 0 0

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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Board of Trade New Offices, Victoria Embankment, S.W.—Design by Messrs. Charles Gascoyne and George Nott, A.A.R.I.B.A., Architects. View, Elevation, East Front, Detail Section N. and S., and two Principal Floor Plans.—Design by Messrs. Percy Thomas, Ernest Prestwich, M.A., and Ivor P. Jones, A.R.I.B.A., Architects. View, East Elevation, North Front, two Principal Floor Plans, and Longitudinal Section.

BUILDING NEWS Designing Club: A Labour Exchange. Three Selected Designs by "Why," "September Morn," and "Penwith." Views, Plans, Elevations, and Sections.

ASYMMETRICAL ARCHITECTURE.

In architectural, as in decorative, design the opposition of symmetry and the regular, to asymmetry and the irregular, is a powerful aid to effective composition. Take, as a kind of diagrammatic illustration, the square slab of variegated marble. Here the symmetry and order of the margin of the slab give a full value to the asymmetrical lines and figuring of the polished mineral. The irregularity of the composition of the long sides of our cathedrals are in opposition to the regular symmetry of their twin-towers and central gable fronts. It is held that contrasts can only be established between divergent phases of substantially one entity; therefore, the real contrast to the regular is irregularity. A judicious use of this power of exalting the symmetrical by opposition of asymmetry conduces to ultimate architectural effect. We suffer somewhat from an omnipresent "symmetry" so-called. Our mathematically correct equal-sidedness of elevations, our numerous similar right- and left-hand public-building facades, confirm this. We seem to ignore the value of the irregular in composition, and fail to grasp the meaning and import of asymmetry—Nature's system of order. With the stars above us, and the daisies in the meadow, we continue to seek novelty in composition on strictly "symmetrical" lines—all neglectful of the fact that asymmetry opens up an endless variety for novel effects in design, and may be considered the genesis of character; for it would seem to be the very divergence from bilateral symmetry in leaves that gives each leaf an individuality, while maintaining the general effect and appearance of special plant type.

To the designer of ornament this question is of vital concern because, unless an ornamental figure or conception be designed on the principle of exact balance or equal-sidedness, it must come under the class of symmetrical form, or must verge towards such to a greater or less extent. Complete and true asymmetry is to our human apprehension absolute disorder. It is the very antithesis of geometrical disposition, and this indicates that an ornamental device on severely geometrical lines will be best set off—enhanced in effect—if placed on a ground of pure asymmetrical irregularity. The absolute asymmetry of Nature may be defined as a type of order related in some way to infinity and the infinite, and to us in a sense incomprehensible. We do not know the laws of absolute asymmetry. In practical design we essay a graceful and "artless" irregularity, and we may observe this much: that irregular grouping and condensation

are attributes of natural asymmetry. We cannot, in art, attain to the perfect artlessness of Nature. We must, in our design and work, necessarily leaven it with the finite. Human imperfection and limitations must needs mar our finest efforts. Yet every housewife endeavours to "arrange" flowers in the vase on the basic principle of natural asymmetry; while the artist ceaselessly aims at artless disposition, where, perchance, if the sole requirement in pictorial composition were this, he might best attain his end blindfolded.

An elementary example of the potent reaction between that which we term order and that which we may term disorder, but, better, asymmetry, is the cottager's window, with small truly-square lead-lights, as these cut into the graceful "disorderliness" of flowers, leaves, and curtain tracery, and not a few designers of artistic shop-fronts have taken this effect and reaction as a principle, viewing small glass squares, with their rigidly upright and horizontal lines as a good foil to the curvilinear and irregular-shaped objects exposed to the view of potential purchasers. The example is but an extension of that above instanced—the square-cut, polished marble table-top, the beauty of which in irregular line and artless surprise and blend of form and colour—all perfect asymmetry, because natural—are set off, improved, and exalted in effect by the rigid, rectangular table-edge. If we could tear off, so to speak, a slab of marble from the virgin block, so that it exposed its irregular asymmetrical edges, we should miss the effect of the geometrical framing; the beauty of marble figure would be less apparent, polish as we might.

These considerations should be useful to designers. As architects we shall profit by a study of the principles involved. In wallpapers, designers have long well recognised this law, and shown their confidence in it by a constant use of straight, parallel lines, substantially the lead bars across cottage geranium leaf and flower, the close-phalaxed sash-bars of shop windows, and the edge of the marble table. The same purpose is effected of giving increased value to asymmetry by the opposition of symmetry, and geometrical lines, or vice-versa.

In practical design in everyday work we talk of a "graceful" disposition where no doubt we have unconsciously in mind Nature's asymmetry. Unless we refer to something the grace of which is geometrical or pseudo-geometrical, as the catenary curves of free-hanging strung pearls, or to sweetly-flowing lines, as in the rib of the acanthus, we aim at that art-

lessness which is the human counterfeit of the sublime asymmetry of Nature. If we decide that we will stud a blue-ground dome with golden mosaic stars, the perfection of the asymmetry we should attain in the star distribution is limited by the limitations of finite understanding and ability. We might, let us say, specify that the golden stars were to be placed irregularly. The problem then before the mosaic worker is to dispose the stars "artlessly." How shall we instruct such a worker? Supposing that it be impossible to give a drawing on which are indicated the star positions, what information and instruction can we give that would facilitate the worker in disposing the stars in a high order of asymmetry, or, as we say, more or less artlessly?

The laws relative to "symmetrical" design or exactly balanced composition are fairly well understood; but it is not easy to reduce the asymmetrical order of design to law. It is, however, obvious that the fundamental requirement is absence of definite pattern, either geometrical, "symmetrical," or in any way including straight line or regular curve. Geometrical disposition we have viewed as diametrically opposed to that which we term asymmetry; for we have agreed that it is pardonable to talk about asymmetry as a function of disorder, save in the case of the starry universe, which we plainly cannot criticise. Taking as an elementary geometrical disposition the arrangement of equidistant points such as the centres of closely-associated circles, our mosaic stars must be arranged in some way exactly opposite in character. Plainly, therefore, a first requirement is irregular dispersion. It follows that in parts the stars must be nearer to one another than in other parts of the dome. This introduces the principles of grouping and condensation. To arrange a graceful asymmetry, we must group. The groups must be irregular, for if we make them of equal value, one of the attributes of geometrical order is evidenced. Both in symmetrical and asymmetrical design the principles of contrast—for effect—must inhere. Under the conditions and limitations assumed, the only opportunity for contrast is in varying size of object and in varying density and sparseness of distribution. An obvious attribute of all beautiful asymmetry is gradation, and this appears to be the result of a certain regularity introduced into the irregular, by the increase and decrease of density in condensation to a nucleus.

We evidently cannot do much by writing or word of mouth to assist the mosaic worker in making a pleasing and graceful star distribution; and at this we need feel

no surprise, seeing that it is the life and study of an artist to work artlessly—has, indeed, been said to be the end and aim of art. We can assert that there must be no pattern; that there must be grouping, and that the grouping must be irregular, and that there must be a gradation such as is evidenced in a flower-strewn field, or in apples on the tree, while contrast can only be a matter of size and density of distribution.

Little as these ideas may illuminate our subject and aid in practical arrangement of the gracefully asymmetrical, they may yet be worth consideration in architectural composition. In exact "symmetry" we always aim at a variety of pattern. It is one—the chief—condemnation of excessive equal-sided design that the practical uses of the building are sacrificed to a pattern. In arranging for a pleasing asymmetry, whether in disposition of features such as gables, towers, and turrets or windows, we must avoid any kind of pattern or definite shapeliness, leaving all such to what we call "chance." This is certainly the effect of the starry heavens, for no kind of reasoning can assign a predetermined pattern-making in the Pleiades or Orion.

The absence of regular order in parts of an architectural composition is a foil to those parts marked by extreme regularity; hence the power of asymmetrical design in architecture relates not alone to the fact that it makes for novelty, character, and individuality, but that it sets off symmetry. We may refer back to the marble table-top as a diagrammatic illustration, or to the cottage window and its floral and lacework background. We obtain the most natural irregularity of disposition when we concentrate on practical usefulness. Few architects can have failed to experience how, after having laboured at a regular and symmetrical front elevation, ignoring symmetry in the latter and working naturally and quickly at its design, they have had an impression that the back elevation is somehow the most pleasing and interesting of the two. This echoes the secret of the success of our simple homes. The leading idea is the comfort and convenience of the occupant, and architecture, as a designed and definite entity superimposed on plain building, goes by the board. One might wish that this more often occurred in our more important works, which so generally suffer from too rigid equal-sidedness, are, in fact, "symmetrical" patterns, often for their own sake, as in the case of town-planning.

Asymmetrical architecture we may define as the foil to exact symmetrical composition. Its chief importance seems to reside in the individuality it lends to design; for every equal-sided object, be it building or butterfly, seems to have a certain indefinable relationship, referable possibly to the universal presence of centre and wings. Once symmetry is discarded, we have an open road for novelty in grouping. There would appear to be one rule for designers—symmetry must be placed upon asymmetry, and asymmetry upon symmetry. Thus, in a long asymmetrical cathedral, we might well place a transept end of highly-studied symmetrical design, while the symmetrical front, with its twin towers, and similar mathematically-balanced composition, should be the better for widely-irregular enrichment. If, as we have supposed, contrast is a matter between like entities, then the greatest foil to a regular array of window openings is a number irregularly placed. This view of the character of contrast seems sound, since large windows appear larger by the opposition of smaller ones, as in Byzantine arcading, and we should never expect a window to look larger or smaller by the fact of the presence near to it of a smaller or

larger door. Generally, we might say that the principle upon which effect is produced in architectural composition and in ornamental design largely refers to a nice discrimination between exact symmetry, so-called, and that true symmetry we term "balance." It is this balancing that affords so wide a field for novel composition, greatly restricted if we confine ourselves to exact equalsidedness.

"BUILDING NEWS" DESIGNING CLUB.

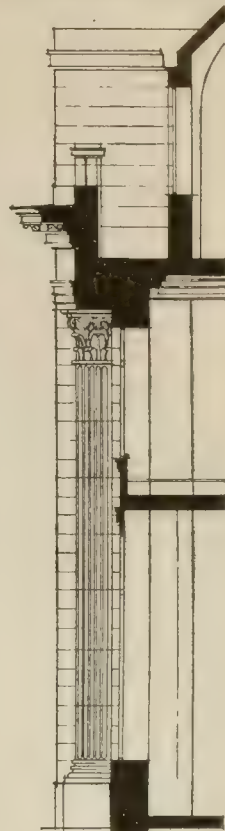
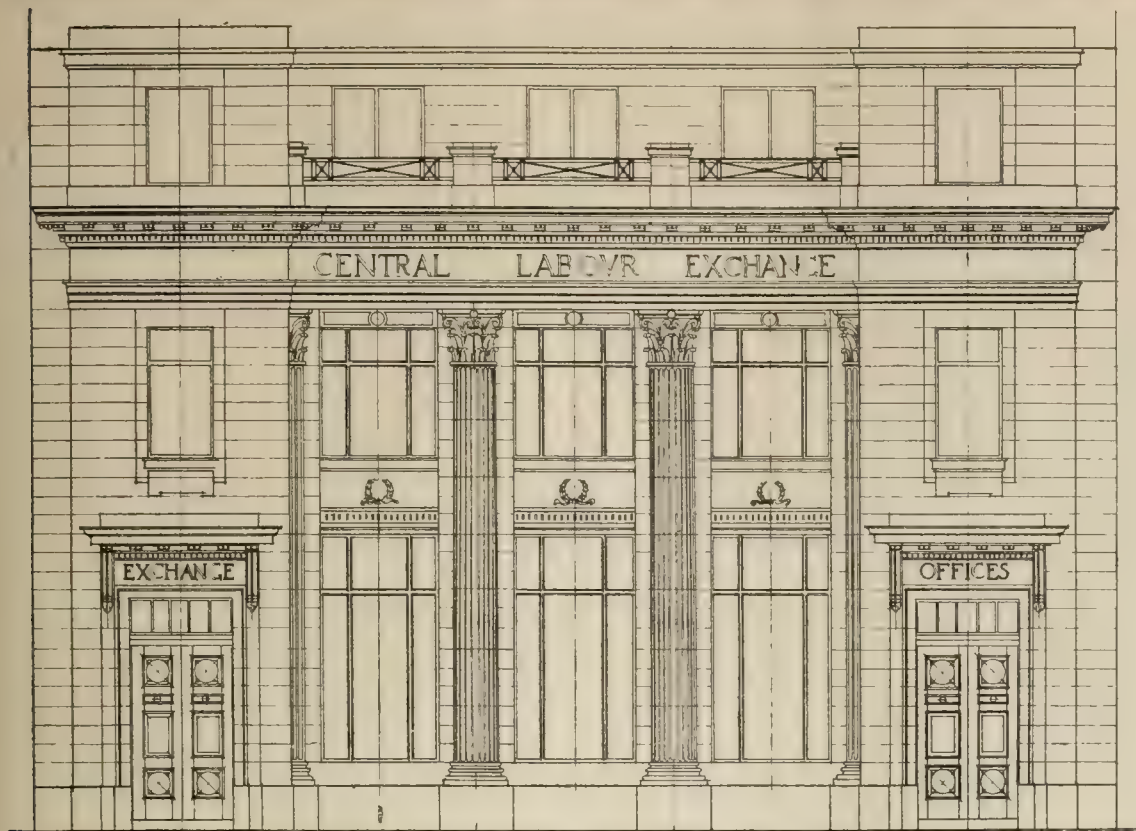
LABOUR EXCHANGE PREMISES.

Our instructions to the Club members for this subject were carefully worded and perfectly definite; consequently the variations among the best of the plans submitted are, on the whole, very slight in character, specially in their general lay-out. Nevertheless, the plans do not compare well in points of detail. Most of the designs differ externally very much. That this should happen is reasonable enough, and precisely what we expected—hence much of the interest belonging to these competitions. We prescribed exactly that the façade of this projected building must be made self-contained, the cornices and other features were not to impinge upon the neighbours' frontages, everything being restricted to the dimension of 50ft. for the elevation. The style specified had to be of a Late Renaissance type, treated in a bold, architectural manner; simple, and yet dignified in its handling, ornament being sparingly used. Such data so stated precluded extravagance; but, all the same, the crux criticorum is inevitable. The result of this business is as follows:—We award "Why" the first place; "September Morn" dawns second, and "Penwith" is adjudged third. "Alpha," as a highly-commendable fourth, runs "Penwith" very hard, owing to the lack of structural care which the Cornishman displays. On that failing we shall have something to say; but whether "Penwith" can be cured of such carelessness will be seen before long. For this Labour Exchange "Why" is undoubtedly the best, though his scheme is full of faults. He is not singular, because all the designs are characterised by shortcomings, which have to be taken into account by setting off one thing against the other as nearly as may be managed. We will take "Why's" plans before considering his elevation. The wind lobby at the entrance is not really necessary, and, besides, it is awkwardly shut off from control. The shape of this vestibule is ugly and inconvenient. The "counter-lobby" would have been better left unimpeded in this fashion. The intimate connection between the lavatory accommodation for the two sexes is a bad fault, and the so-called "yard" is much too small, making a dampish and fusty contrivance none too well shut off from the waiting-room by a glass and wooden screen. The absence of a fireplace is an objection, and as chimneys were to be made a feature of, "Why" ought to have provided them. A heating chamber is put under the entrance lobby, just where no light could be possibly obtained, and no air either. No flue is shown from the furnace. The General Office is spacious and capably lighted. The private room at the back is quite permissible as an additional provision. It has had to be kept low to allow of lights over its lantern-fitted flat. The staff lavatory is disproportionately tall in order to get light and air. The staircase is nicely lighted, and there is a good entrance to the offices. The first floor is not particularly well set out. It looks crude and needlessly uncomfortable. No escape staircase at rear is drawn or suggested, as mentioned in the conditions. We much commend the façade, and think the treatment quite the most suitable of any scheme submitted. It is downright in idea, and well thought-out, though "Why" forgets the R.W. down-pipes. The roof surely would show, as the parapet is quite low; but the big section hardly agrees with the smaller one in this item, because the frontage section suggests a flat which would never do over so big a room as the top floor provides; but the general

section and elevation are intended to be taken no doubt as correct, consequently the sketch perspective should have included the roof, and is in this respect unreliable.

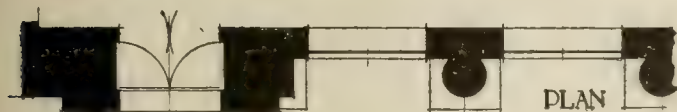
"September Morn" makes good use of his ground-floor space, giving us in some ways a workable scheme, and adopting approximately the sizes specified for the waiting-room and applicants' lobby. The general office is one of the best, and it is amply lit, with the back wall carried up in a practical way over a 14in. wall, which extends along a considerable part of the entire width of the premises. The overhanging of the staircase is not so frankly acknowledged as it ought to have been by dotted lines on the ground-floor plan, in looking at which one has to remember that the height asked for cannot be carried uniformly through under the stairs up to 14ft. in the clear. Though not so long and not so deep quite as "Alpha's" exchange (which, like "Why's" plan, adheres throughout to the stipulated height), it is larger in area than "Penwith's" big office, and free of his structural defects, which we shall speak about presently, and also "Alpha's" fatal fault in leaving the men and women to make shift without any lavatory accommodation while waiting to be engaged. The oversailing of the w.c. and lavatory shown on the first floor of "September Morn's" plan comes forward regardless of what happens below, and as one result of this the small rear window to the right of the general office could not be of much use. The main cross wall over is carried immediately above the middle of the staff lavatory window. The flue from the waiting-room fireplace seems to be set in the wrong chimney-breast on the first floor. The elevation, in many respects excellent, is spoiled by the inconsequential lunette windows over the doorways, and the bull's-eye lights high up on the first-floor landing. The vertical lines between the hood-moulds and these windows are objectionable, so that these parts of the façade spoil its effect. A plain breadth of walling would have been very much better; but the lighting of the staircase anyhow is inadequate at present.

"Penwith" has forgotten that for a Labour Exchange strict avoidance of monumental treatment is essential, and we are perhaps ill-advised in being influenced, as we admit to be the case, by the general grace and character of this elevation, which, strictly speaking, belongs more to a bank or insurance office. "Penwith's" plan, with all its faults, is nevertheless one of the most suitable, even if too much space is lost in the staircase hall, besides which, in setting out his steps they would block up the first-floor window badly. This bungle could quite easily have been obviated by keeping the stairs back a few feet with a well between the ramp or string and the front wall. Ample room provided by the depth would well allow of this, and more light would then reach the ground floor. The neat way in which "Penwith" separates the men and women's approach to their "cabinets," with an open space for ventilation and light coming between, is very good. The two end pavilions of the front make excellent features. However, the plans and sections show how inadroitly the author has managed his job. The attic wall could have been set back without offence if proper provision had been made to carry this oversailing; but iron stanchions in thin walls cannot be commended, and, as a matter of fact, the plans and section do not tally when the dividers test positions. The fireplace on the cross-wall next the staircase has no flue on the top floor, a pair of swing doors coming directly over the spot. This design gives a back balcony, isolating the upper lavatory, and suggesting a way for outside escape in case of fire; but the top plan ought to have shown the flat to this sanitary extension, and the cross-section is left incomplete, without any indication of the rear parts of the premises. The perspective is very indifferently delineated, so we omit its illustration. The pilasters at the reveals would look so very superior to what his picture presents. Quite likely they would have been better omitted altogether—depending instead on the pair of fluted columns for

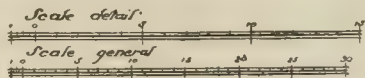


FRONT ELEVATION

SECTION



PLAN



PLACED THIRD

"BUILDING NEWS" DESIGNING CLUB: A LABOUR EXCHANGE.—Design by "PENWITH," placed Third.

the architectural effect. The whole façade looks too expensive as it is, and the water from the balcony on top obviously would want ample outlets; none, however, are provided.

"Alpha," in several respects, is excellent and straightforward, his scheme being shown in a workmanlike way. The omission to which we have already alluded in respect to the conveniences for the male and female candidates spoiled this design's chance, coupled with the small dimensions of the waiting-room, though the office-floor plan

most ungainly. Glass panes carried down to bottom rail would have been more in keeping. The perspective unduly widens these openings, badly misses the effect of wide architraves, as set out on the geometrical drawings. The absence of a chimney or chimneys is detrimental to the view; but this loss is due to the overcrowding on the sheet.

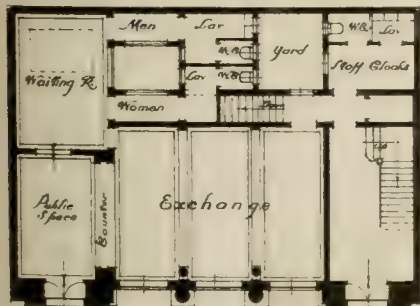
"Bournemouth Queen" fails to give any accommodation for the relief of candidates while waiting, but three sets of w.c.'s are

windows, also the panels on the piers now cutting up the intermediate ashlar. The drawing of the frontage section is unfinished, and this had to be taken into account in judging the competition.

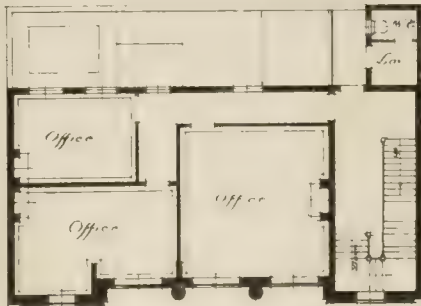
"Walbroke" projects two oriel bays, which do not add to the charm of his design. Otherwise, if official-looking and expensive, it looks fairly suitable. The sketch view omits the big ventilating turret, the main roof, and chimneys. The doorways look squat, and their broad, projecting jamb piers add to this stunted effect. The men's and women's lavatories are placed in the yard with different approaches. The general office is only 22ft. by 20ft. 6in. in size. If the first floor should be divided up actually as drawn, the angle-set fireplace flue would have to turn over on the back wall very sharply to clear the big room on the top floor; but this practical essential is left out on the plans. Generally this proposal is well drawn and praiseworthy, though the author must put his brains into his work.

"Tom Tit" pediments his end pavilions, between which, on the top stage, the balcony occurs, with a mansard roof seriously curtailing floor space by being thus recessed, denuding the floor area of the second floor, which is lighted by four dormers. These hardly go well with the monumental scheme of the façade. The doors are too tall, while the circular lights in the attics and the first-floor windows are needlessly restricted. The men and women's closets side by side are so compact as to mean an undue intimacy, and even so among roughish people, who are often presumed to be scarcely particular enough in these relationships. Top lights for the staff w.c.'s would not be allowed by urban by-laws. Down pipes are shown for the discharge of water from the balcony. The view is over-inky in draughtsmanship.

"Sea Wolf" is painstaking but not really practical, and some of his provisions, so carefully shown, are needless, such, for example, as the angle-set fireplace in the tiny counter space, in which there is hardly room enough



GROUND FLOOR PLAN



FIRST FLOOR PLAN

"BUILDING NEWS" DESIGNING CLUB: A LABOUR EXCHANGE.

Design by "PENWITH," placed Third.

above it is the best of the whole series. The section also is very well worked out, and the basement is well considered. There appears to be ample accommodation for both sexes; but it is confined exclusively to the staff. The labour applicants have none. The aprons to the first floor windows would have been better left out, as the rusticated piers, occurring five times along the front, give ample vertical lines without these other repeats. The continuous iron-fronted balcony ranging from end to end of the front, pulls the whole thing together nicely, and the plain fascia with simple cornice is quite an advantage. The top-floor doors with framing in lower part look

furnished for the staff. The basement is well lit from a good backyard. Generally the arrangements are well managed, and the elevation is suitable. Two of the offices are minus a fireplace, which is an oversight. The appearance of the front is spoiled by the lumpy drawing of the iron front of the balcony and the "balconettes" over the doorways are incongruous and very ugly. This is one of the few designs properly showing rain-pipes; but no provision is made to take the accumulation of water from the balcony. The lay-out of the front is worthy of praise. We should have preferred the omission of the key-stones to the ground-floor mullioned

to "swing a cat." But that is not the worst committed fault by "Sea Wolf," who gives no light whatever for the waiting-room, and no space worth naming to get any light from outside. The women's closet has no vertical window, and the top-floor room, made only 9ft. high, is not tall enough. The big timber-trussed roof is ceiled in, and this space is wasted. If he did not quite mean that, why black in this section? The elevation is rather commonplace, but appropriate. The appearance would have been much improved by running the balcony right out from end to end, so as to get a horizontal line beyond the two doorways at top leading to this balcony overlooking the street.

"Pergradus" puts porches, and runs the projections right up to the parapet, and in the perspective this recessing of the intermediate part of the façade is much overstated, giving a "cooked" effect in order to obtain a palatial appearance, quite inappropriate to labouring men's premises. The elevation is over-elaborated, and in some respects it is at best very poor. The plan is equally unsatisfactory: the lighting of the waiting-room from windows perched high up over the adjacent flat is the result of want of thought and bad scheming. Every time the women use their closet the clerks in the general office can see them pass through their lobby, and when the clerks are on duty at the counter, they have to stand in a space 2ft. wide, where it would be impossible to pass each other.

"Black Cat" cuts up his ground-plan badly, and his elevation, with its twin pediments above, displays another pair of nearly the same size near the eye over the entrances. The view sketch is an indifferent piece of draughtsmanship, poorly realising his design.

"Doctor" duplicates the waiting-room, with cramped results, and shows a 6ft. little area at the back. The staircase is extremely dark on the ground floor, and the elevation shows very small windows to the big office, where much light is essential. There is a want of thought displayed in this proposal.

"Raven" is better in this respect; but his waiting-room has to depend upon a lantern-light. The telephone is in a black hole under the stairs. The entrances have columns and pediments projecting on to the pavement. The men and women's private premises are placed "cheek by jowl" with the doors under the skylight, in a most conspicuous position.

"Empire" puts the w.c. leading direct out of the entrance vestibule near the end of the inquiry counter, with the urinal full in view of the front portal when the closet-door happens to be left open. The façade has wall pilasters, with caps and bases, running up through the balcony.

"Nil Desperandum" is not likely to set the Thames on fire while he provides one solitary window only 2ft. wide, and that set in the corner to light the waiting-room 15ft. 9in. by 15ft. The lighting for the big office, 22ft. 6in. by 21ft., is managed indifferently by three windows, measuring all told 10ft. wide, and one of these three opens into a little back yard. We say nothing about his design, only that the author draws in cobblestone pavings and individual bricks for the outbuildings walling in a minute way.

"Ogre" sends a crisply-drawn little perspective view; but his plan is quite impossible. The waiting-room has a domed lantern-light, and too much space is devoted to sanitary accomplishments and in reaching them. The general hang of the plan has a crowded effect. Only half the elevation is delineated; but it would make a quiet sort of presentable building externally, and if poor in detail the result when erected in a side street would be suitable. The plan never could be satisfactory, wasting space on passages as "Ogre" does.

The following is a copy of the conditions: A small Labour Exchange Premises to be built on a level site facing south in the main street of a country town. The frontage is 50ft. long, and the site is 35ft. deep. The first floor to be available for offices, and the top or second floor will run up into the ceiled roof, and this place is intended to be

occasionally used for labour exhibitions, or for various meetings; but in the usual way it is for office-staff work. There is to be a 4ft. staircase up to these two floors, with a street-door to the right-hand of the frontage, the Exchange entrance proper being located at the other extremity of the façade. A door inside this staircase entrance-lobby is to communicate with the ground floor of the Exchange for the use of the officials. Out of the 35ft. depth allow behind an open way, or a little backyard, to isolate the small lavatory and w.c. accommodation for men and for women and for the staff; all these to be nicely separated in a compact but effective manner. The main part of the ground-floor space is to be used as a big, well-lit general office for the clerks. Inside the Exchange entrance provide a counter-lobby, 15ft. long and 10ft. wide, for use of the public. Counter on one side only. To the rear of this vestibule provide a waiting-room, about 18ft. deep by 14ft. wide, or thereabouts. In the basement of the whole building there will be a coal-store, card and general stock-room, and book space; but this basement need not be shown, though a staircase to give access to it must be set out on the plan of ground floor. The two upper floors are not to extend to the full depth of the site, and should not exceed 25ft. deep, except at back of staircase, where a lavatory, etc., for the use of both floors is to be run out 10ft., and be entered off the first floor, or off a half-space landing, as may be found convenient. Where there is a void below, the main rear upper wall will be carried by girders and stanchions. The first floor will be partitioned to suit subsequent requirements; but a division of the space may be shown suitable for offices; the point chiefly to be observed is the arrangement of the windows for an economic use of the separate rooms, not more than three in number. No divisions required on the top floor; but outside the front of the façade add a 3ft. projecting balcony, with an iron "balustrade" to run along the front, not the entire length, but far enough to allow of glazed doors or French casements at the ends (one being off the staircase top landing) as an approach to the balcony, level with the top floor. The height of the ground floor to be 14ft. in the clear from floor to ceiling. First floor 10ft. high, and top floor 9ft. to wall-plate or springing of the roof ceiling. The front elevation to be designed in stone ashlar, with a one-span roof running parallel to the street, and good chimney-stacks made to balance in the general outline if this can be managed. Roof to show above the front wall parapet, and green-slatted. The front wall will be flush with adjacent premises, these being same height as this building. The elevation of the Exchange to be complete in itself, and cornices and other projections must not impinge upon the neighbours' fronts; everything to be within the 50ft. dimensions. Style Late Renaissance, treated architecturally in a bold, simple, and dignified manner, ornament being sparingly used. The front elevation and section of the front wall to be drawn to the scale of 4ft. to the inch. The three plans and general cross-section (which must show the back-yard or "open space," and the manner of lighting at back and front), may be drawn to eighth of an inch scale, or smaller if necessary; but space must be provided on the sheet for a perspective sketch of the front. No windows are allowable on the back boundary line of the site, which is 35ft. from front face of the building; but an iron open staircase for emergency purposes may be built so as to land persons from the top floor on to the flats, if any, of the rear premises, and so down from thence into the land behind the 35ft. wall, which is common property so far as allowing such an exit.

A Local Government Board inquiry was held at the town-hall, Margate, on Wednesday week, before Mr. Edgar Dooly, into an application by the town council for permission to borrow £3,000 for recreation and pleasure-grounds purposes at Westbrook, £600 for widening and improving All Saints'-road, and £690 for private street improvements in St. Dunstan's and St. Mildred's-roads.

THE REPORT OF THE LAND ENQUIRY COMMITTEE: RATING.*

By ISAAC DIXON (Fellow).

To-night it is my pleasure, in company with my friend Mr. Ryde,† to bring before your notice, and invite your discussion on, the Land Enquiry Committee's proposals for the reform of the existing rating system. The Land Committee quote and agree with the Royal Commission on Local Taxation in stating that the raising of money by taxation is fairer than the raising of it by means of local rating. One reason, the main one, given for that conclusion, is that inequities are less likely in the former case, owing to the numerous interests which the taxes directly affect, whereas rates are levied solely on the annual value of real estate. And so, as the rate in the £ increases, the subject of rating attracts more and more attention, and, I may say, gives rise to apprehension, not only by reason of the amount of money involved, but because of its very important and far-reaching economies. Herein lies a principle which, above all others, justifies the State in taking the matter up. A reform of rating can now be so shaped as to affect economically the welfare of the country generally. I think it is conceded that the real burden of rates is borne by the owner, and not by the occupier, for though in most cases the latter actually pays the rates, the amount of rent which he contracts to pay is influenced by his sense of liability to pay rates. Therefore relief by means of a subvention from the Imperial Exchequer is beneficial to landowners, but in making this statement I would not put it as the Committee does, on page 631, viz.:—

Any subsidy from the Imperial Exchequer in relief of existing rates must necessarily tend to enable landowners to charge a correspondingly higher rent. Hence such relief would be a present of so much public money to landowners.

I submit that a fairer way of putting it is:

That as the burden of local rates prevented a landowner obtaining the full economic rent which his premises were worth, so the lessening of that burden by means of imperial grants would permit of him receiving a larger proportion of the value of his premises than circumstances had hitherto permitted.

One more feature to be agreed on, and the problem begins to take shape. Land is necessary for the commercial and social development of the country, but it is not a commodity which can be created or manufactured; it exists, and must be accepted as it is found. The degree of prosperity of the community is largely contingent on whether the land is, or is not, put to its best use. Therefore the question for the Legislature to solve is, On what principle can rates be raised so as to be an equitable burden on those paying them, and at the same time a principle which will engender sound economic circumstances? The Land Enquiry Committee hold that the present system falls short in the following as the main instances:—(1) It discourages improvements; (2) it puts a premium upon the misuse of land.

1. The Present System Discourages Improvements.

Before making this assertion, the Committee sought information from numerous sources, the question asked being, "Is it a common view that the present method of including the value of improvements in the rateable value discourages the improvement of property?" The majority of replies received were in the affirmative, and the Committee say that in the case of both the building and the agricultural industries "there is this common grievance, that the more the occupiers by their labour and industry develop their business the higher they are rated." Well, in my opinion, this sentence taken by itself is apt to be misleading. It should be stated that the higher

* Read at the Ordinary General Meeting of the Surveyors' Institution, held on Monday, Feb. 22, 1915.

† We gave Mr. Ryde's paper last week.

rates ensue only if the development of the business necessitates the occupation of more valuable premises. Again, in discussing the same aspect of the subject, the Report says, on page 521: "Though such rating may not lead a man to abandon improvements which are certain to pay, it leads him to curtail them, and improvements whose immediate financial success is uncertain are reluctantly relinquished. This is certainly a serious check on initiative and enterprise." I agree to a certain extent with this finding, but surely it is not only in the property world where prospective improvements are reluctantly relinquished "because of the uncertainty of their immediate financial success." From my experience as a rating surveyor I would wish that many other improvements had been reluctantly relinquished. This is a matter in which I think it is very desirable that some interest should operate to deter the carrying out of improvements which have not a reasonable prospect of success. I do not wish to be misunderstood on this point, or, indeed, on any other. Healthy development should be encouraged; but in the area with which I have to deal there are many places quite derelict, and others partly so, simply because buildings have been erected, extended, or altered in pursuance of what can only have been ill-advised attempts at improvement. The cost of removing such properties is often prohibitive, and hence the source of many examples of under-developed, because badly developed, land.

On page 571 the Report says: "At present there would probably be a large measure of agreement with the suggestion that owners of vacant and undeveloped land should make some contribution towards local expenditure. The difficult question to decide would be the amount of the rate which should be levied." In discussing the equity of heavier rating on the owners of vacant and under-developed land, the following statement is made: "No doubt the owner in theory could recoup himself by putting his site to a better use, but in practice there are often serious obstacles in the way. Sometimes, for instance, there may be no immediate demand for reconstructed premises; sometimes the owner may not have sufficient capital for a reconstruction scheme, sometimes he may be a trustee without power to expend money or to borrow money for reconstruction, while in other cases it might only be possible to reconstruct as part of a wider scheme which had to wait for other leases to fall in. Perhaps this difficulty is most acute in the case of land which lies at the edge of the most valuable business centres of towns. Such land is often covered by working-class property built many years ago, and is often in the hands of small owners who purchased their own house, and perhaps two or three others, through the medium of a building society, some forty or fifty years ago."

These contentions are very true, and will prove a decided obstacle in the way of persuading one that a site rate would be equitable. An interesting case in point is New Brighton Tower grounds. When these premises were built some years ago they represented a genuine attempt at development; I think no one can gainsay that. However, the venture proved a decided failure, and now the premises are practically derelict; during summer months a small rent is obtained for portions of the grounds, but even that is not sufficient to cover the annual cost of repair and maintenance to the structure of the tower itself. That cannot long be neglected without becoming a source of great danger to life and property adjoining. Is there any equity in rating this vacant or under-developed site, according to the Committee's definition, it is either one or the other, yet it is not for lack of "enterprise." The effect of a site rate would probably be to force the premises under the hammer, to sell for a very low figure, and then be further exploited as an exhibition ground, or re-developed. This would mean aggravating the already great personal loss to the promoters, yet it might be a desirable development from the point of view of the community. Other cases can no doubt be found in every district; but their existence does

not necessarily condemn the proposal for a site rate. Probably no law operates without causing unwarranted hardship in some cases. To whatever extent the law and practice of rating may be amended, there will, of course, be commercial failures reflected in derelict properties; these cannot be prevented, so that it is unfair to suggest that where they do exist the rating system is to blame, or that a change in the system would prevent their existence. If the present system does discourage improvements, it can only be to a very slight degree.

2. The Present System Puts a Premium on the Misuse of Land.

It is well known that premises are now rated on the principle of "rebus sic stantibus," and that in valuing them for rating purposes it is not the concern of the surveyor whether they might be put to a better use. He is to ascertain their value for the purpose for which they are being used. The Committee offer a strong objection to this principle, and claim that it is not in the interests of the community to allow land to be under-developed, or, in some cases, not developed at all. I think all surveyors will agree with them in this finding, but a very difficult question to answer is, Where can a line be drawn between under-developed land and developed land? To say that the rating system places a premium on the misuse of land simply because the occupier of it has not had to pay so much in rates as he would have had to pay if the occupation were made more valuable, reminds one of the tale of the man who refused to have an increase of salary because it would involve the payment of income-tax which he could not afford. The Committee allege it as a grievance that vacant land escapes the payment of rates altogether, and that under-developed land escapes partial payment of rates. Looking at the question from a revenue point of view, it does appear unreasonable to expect a man to contribute to the local exchequer in respect of premises which are not yielding any profit to him. At the same time there is no disputing the fact that, even in the case of empty property, benefit is received from the operation of municipal services, and policing, etc. As an instance I might recall the strike of 1911, when many riots occurred in Liverpool. In various parts of the town empty properties were wrecked by the rioters, but the owners of these properties were able to recover compensation by way of damages, although they had not to pay any rates. Such occasions as these are happily rare, but the illustration serves to justify to some extent the Committee's claims. Personally, I would be favourable to rates being levied on empty properties, but not to the same extent as they are charged on occupied premises. Whilst considering objections to the present system, I think it only fair, in defence of that system, to point out a few of the difficulties under which it is worked, and some reasons for it not being so satisfactory as it might be. These remarks apply to procedure outside the metropolitan area. In the first place, I consider that the Union Assessment Committee Acts (which apply) are faulty in not laying down definitely that periodical revaluations shall be made. No time is laid down for the making of a new valuation list. It is left to the discretion of the overseers or the assessment committee to decide if, and when, a new valuation list shall be made, and I wish strongly to emphasise that with them lies the power to decide not just as to when a new list shall be made, but as to whether a new list shall be made or shall not be made at all. In many unions the valuation lists are in a sad state of confusion, owing to their having been amended and supplemented from time to time without having been thoroughly revised. A further important point on this topic is that even where the assessment committee or the overseers do order an entirely new valuation list to be made, they are not bound to have premises revalued; the work can simply consist of re-writing and rearranging the existing valuation and supplemental valuation lists in correct order. Again, the rating valuer has no power to compel the production of infor-

mation concerning premises he desires to value; neither can he insist on entering to inspect premises. Quite a short time ago the assessment of a large undertaking was the subject of arbitration; unfortunately the submission contained no clause granting to the surveyors the right to enter for the purpose of survey and valuation. The company whose premises were the subject of the reference refused to permit the opposing surveyor to enter any of their premises. He was, therefore, only able to make general submissions to the arbitrator. There was no time to protest, as the valuation was immediately required for inclusion in a new valuation list nearing completion, and it would have delayed the laying of the rate. I do not suggest that the Union Assessment Committee Acts were responsible for this action, but I do suggest that there is nothing contained in those Acts which prevents such a situation arising in the case of an ordinary valuation. As an instance, I may mention the case of a ropeworks company which a short time ago appealed to Quarter Sessions against the assessment of their premises; when the defendant's surveyor sought to inspect the property concerned, the company refused him admittance.

(To be concluded.)

THE LONDON COUNTY COUNCIL.

At the meeting on Tuesday of the London County Council the Highways Committee recommended that the tramway tracks in Commercial-road, East, which is being widened at and near Britannia Bridge, at a net cost of about £24,000, be relaid by direct employment of labour at a further estimated outlay of £2,500.

The Council was recommended by the Improvements Committee to approve an estimate of £3,650 in respect of a widening of High Holborn from about 50ft. to 60ft., an opportunity for this being given by the building of a new telephone exchange on the site of the Inns of Court Hotel. Pending the continuation of the improvement in either direction, one-story shops are to be built on the land ultimately to be added to the public way, such shops to be removed as soon as the widening is continued.

It was reported that the total cost of the erection of 141 cottages on section A of the White Hart-lane estate has amounted to £38,028 12s. 8d., which is £683 12s. 8d. in excess of the estimate of £37,345, an increase due to additional works in respect of which expenditure not exceeding £909 19s. 8d. was sanctioned on two occasions.

The Asylums Committee reported that the cost to the Council of the extra expenditure to be undertaken by the Epsom Local Authority in connection with disposal of the sewage from the projected asylum would amount to £5,940.

Construction work on the Cathedral of St John the Divine in New York will be resumed in the early spring, after a long period of inactivity. Work on the nave is to be begun, and will continue until the present available funds (200,000 dol.) are exhausted.

The Bishop of Norwich has consecrated a font placed in the parish church of Pettistree-with-Londham. The church was for generations in ruins until early in the 18th century, when it was rebuilt, and since then there had stood at the west end of the nave a pedestal 3ft 6in in height and 2ft. square. In the top of this was a hole 9in. in diameter and 9in. deep. This held an old stone china basin with a picture on the basin of the figure of Vulcan standing between two female figures. Great care seems to have been taken of this basin, as there are sixteen rivets in it. The tradition in the parish was that the font proper was bricked up in the pedestal, so it was recently decided to open it. It was found to consist of common white bricks, pieces of stone, and plaster. In the lower part was found the Purbeck marble base of a Norman font, in good condition, and in the hole in the centre through which the drain had passed, two old clay pipes. Below this base two portions of the centre column were discovered, and under the floor a few Norman tiles. The new font is of Hopton Wood stone, and was executed by Mr. Stephenson, of Woodbridge; the cover is of English oak.

OBITUARY.

We regret to announce the death of Mr. A. R. Mardon Mowbray, the well known ecclesiastical architect, which took place at his residence, 44, Beechcroft-road, Oxford, on Wednesday in last week. He had been ill for some time with heart trouble, and was sixty-five years of age. In early life Mr. Mowbray was articled to the late G. E. Street, R.A. Some years ago Mr. Mowbray commenced practice on his own account, and executed many restorations and reparations in various churches in the diocese. He was the architect of no less than thirty-eight churches. In Oxford, the church of St. Mary and St. John is one of his most successful examples. Another important work he carried out was the church of St. Michael and All Angels, Summertown, to which the tower has yet to be added. Mr. Mowbray was also responsible for the conservative reparation of the tower of St. Michael-at-the-North Gate, Oxford. For some years Mr. Mowbray was architect to the Clewer Sisterhood, and he executed important commissions for the Duke of Devonshire at Eastbourne. He was also architect to the Wantage Sisterhood. Mr. Mowbray was formerly hon. secretary of the Oxford Entertainments and Visitors Committee, and was never more happy than when conducting parties of visitors round Oxford and pointing out the architectural and historical details of the various buildings. He was also for many years the general and painstaking hon. secretary of the social service committee of the Oxford Diocesan Conference. In recent years illness has prevented him from active work both in this connection and in that of his profession. The funeral took place at Cowley St. John Churchyard on Saturday.

Another well-known Oxford architect passed away on Sunday at his residence, Museum-road, in that city, in the person of Mr. Harry Wilkinson Moore, of Beaumont-street. He was the third son of the late Mr. Arthur Moore, and was in his sixty-fifth year, and carried on the practice of the late Mr. W. Wilkinson, of that city, chiefly in domestic work. He joined the Royal Institute of British Architects as an Associate in 1881, becoming a Fellow seven years later. In 1912 he retired from practice, and was placed on the list of Retired Fellows.

We regret also to announce the death of Mr. Arthur Marshall, A.R.I.B.A., F.R.P.S., of King-street, Nottingham, who died on Wednesday in last week at his residence in the North Leicestershire village of Lockington, aged fifty-six years. Mr. Marshall was born on December 23, 1858, and in 1881 passed in the class of proficiency in the old voluntary architectural examination. In the following year he joined the Royal Institute of British Architects as an Associate. He also took a prominent part in the work of the Nottingham and Derby Architectural Society, of which he had been the president. He carried out much architectural work in hospitals and other public institutions in the Eastern Midlands, and was still more widely known as a skilled photographer of architectural subjects, landscapes, and genre, and as lecturer. He was a Fellow of the Royal Photographic Society and a member of the Nottingham Camera Club, and also of the Nottingham Philatelic Club. He leaves a widow and two daughters. The funeral took place on Monday afternoon in the churchyard at Lockington. The parish church, mainly a 14th-century building, is indebted to Mr. Marshall for many useful gifts.

Mr. Charles Grey Grey, F.S.I., died in Dublin on Saturday, in his ninetyeth year. He was the second son of John Grey of Milfield, Wooler, Northumberland, who was born in 1785, and brother of the late Mrs. Josephine Butler. Charles Grey was educated at Durham University, and having afterwards studied engineering, he was employed in surveying for the Commissioners of the Greenwich Hospital Estates, for whom his father was receiver. In 1849 he travelled to Sweden in the first screw steamer which entered the Baltic, his object being to study forestry. Two years later he was appointed

manager of Lord Derby's Irish estates, residing at Ballykisteen, co. Tipperary, and he afterwards managed, in addition to Lord Derby's estates, those of Mr. Stafford (Secretary to the Admiralty), the Smith-Barry estates (now Lord Barrymore's), and those under the governors of the Erasmus Smith estates—these estates together covering a large proportion of the counties of Limerick and Tipperary. In 1863 he was appointed receiver for the northern estates of Greenwich Hospital, with residence at Dilston, in succession to his father. In 1874 the Commissioners of Greenwich Hospital sold their northern estates, and Charles Grey retired on a pension, which he drew for over forty years. Subsequently he managed the Pembrokeshire estates of Mr. Le Hunte, and there started an agitation in favour of a railway to Fishguard and a steamer service to Wexford—a scheme which materialised only a few years ago. He also acted as manager of several other estates, including those of the Earl of Lucan. From 1881 until 1891, when he retired, he was Chief Court Valuer to the newly-formed Irish Land Commission. He was an active worker in the Irish Forestry Society.

Mr. Walter Hine, of Gaywood, has been elected highway surveyor to the Freebridge Rural District Council.

What is practically the last link in a very large scheme of extension at the Liverpool Corporation gasworks has been formally approved by the full council in committee.

The Joint Poor Law Committee for Surrey have selected a site at Epsom for an institution for the care of epileptics and feeble-minded persons. The cost of the erection is estimated at £16,900.

The urban district council of Prestwich have received the sanction of the Local Government Board to the borrowing of £20,515 for the construction of the Deyne Valley intercepting sewer.

At Bognor last week, Mr. Courtenay Clifton held a Local Government Board inquiry into an application by the urban district council for sanction to borrow £7,928 for the provision of workmen's houses.

The corporation of Cambridge have adopted plans prepared by Messrs. Spalding and Myers, of Hills-road, Cambridge, and King-street, Cheapside, for new cottages in Stanley-road. The estimated cost is £2,500.

A new union railway-station is to be erected in Chicago at a cost of about 65,000,000dol. Plans for this structure have been prepared by Messrs. Graham, Burnham, and Co., architects, 9, Jackson-boulevard, Chicago.

The town clerk of Bridlington has been informed that the Local Government Board has sanctioned the purchase by the corporation of the new Spa and Gardens Company on the south side of the town for £16,000.

At the general infirmary, Burton-on-Trent, a series of improvements and additions has just been completed at a cost of £8,000. A new theatre block has been erected, fresh quarters have been provided for nurses, and additions made in other departments.

After the war is over it is proposed to hold, with the co-operation of the Russo-British Chamber of Commerce, an Anglo-Russian Building Trades and Decorative Arts Exhibition in Petrograd, the idea being to replace German influence on the architectural and decorative arts by British.

Mr. P. C. Downs, Local Government Board inspector, has held an inquiry in Dublin respecting an application by the corporation for sanction to borrow £3,175 for the widening and improvement of Chatham-row, which lies in the direct line between Chatham-street and William-street, and which, owing to its narrow width, is closed to vehicular traffic. The city engineer, Mr. J. Buckley, submitted plans of the proposed improvements.

At the Norwich Consistory Court, last week, decrees were issued for a stained-glass window in the east end of the chancel of Hethersett Parish Church, and for placing a new window at the east end of the south aisle of Caister Church, and for forming a morning chapel. A third decree was granted to the vicar of St. Etheldred's, Norwich, giving authority to put a new reredos at the east end of the church in place of the old one. The reredos is the gift of an anonymous donor, who will bear all the expense of the work.

Building Intelligence.

BERWICK-ON-TWEED.—The cost of Berwick's new station, plans for which have been passed by the directors of the North British Railway Company, is estimated at between £30,000 and £40,000. The plans provide for an island platform 800ft. long between the up and down main lines, and for straightening out the curve from the Royal Border Bridge. The work is to begin with the erection of a new bridge to carry the main road across the line. Berwick station dates from 1846, when the main line between Berwick and Edinburgh was opened. It occupies the site of the Great Hall of Berwick Castle, in which, in 1292, Edward I. arbitrated between the claims of Bruce and Baliol to the Crown of Scotland.

BORDESLEY.—About eighteen months ago a beginning was made on the Sandy-lane side of Coventry-road with the new G.W.R. station, and although yet far from completion, bookings were started at the new entrance in Coventry-road on Sunday. The entrance-hall and ticket-office is faced with enamelled bricks. The double stairway leads up under cover to an island platform 750ft. long, which meets the needs of the two main lines. There are waiting-rooms and the usual offices, but there is much yet to be done before the alterations and additions are completed. Another platform is to be constructed between Coventry-road and Sandy-lane, and there will be two additional lines for passenger trains, and a goods track.

BLACKHILL, COUNTY DURHAM.—The Leadgate Industrial and Provident Society opened a new block of buildings as a branch of their business in Derwent-street, Blackhill, on Saturday. The shops for all four departments are in front, and extend about 100ft. in one story, built of stone, with slate roofing, and have a depth of 106ft. At the rear there is a flour-warehouse, with a tea-room for the employees. Outside this there are cart-shed, stable, slaughter-house, etc., with two rooms for the cobblers. The manager's house adjoins. The heating is by hot water, and the lighting by gas. The plans were prepared by Mr. Joseph Skelton, the president of the society, who was also responsible for the architectural design of the other branches of the Leadgate Store at Chopwell and Allendale Cottages. The builder was Mr. J. W. Westgarth, of Blackhill, and the cost was £3,500. Mr. Jos. Walton, Leadgate, acted as clerk of works.

The Board of Trade have confirmed an order made by the Light Railway Commissioners authorising the construction of a light railway in the county of Flint from Dyserth to Newmarket.

We are informed that Sir Henry Tanner having retired, the senior principal architect to H.M. Office of Works is Mr. W. Pott, whose address is H.M. Office of Works, Storey's Gate, Westminster, S.W.

The Wesleyan Chapel in Queen-street, Scarborough, erected in 1839, and the largest place of worship in the town, was destroyed by fire on Friday. Only the outer walls are left of the chapel, which was renovated ten years ago at a cost of over £5,000. There were also consumed a remnant warehouse valued at over £30,000, ten shops, and two houses.

In an action brought before Mr. Justice Avory, with a special jury, Mr. Ernest Henry Bright, principal clerk employed in the Office of Works, has been awarded £750 damages for personal injuries against Messrs. W. and G. A. Cros (Limited). The plaintiff, while driving from Epsom railway station to his home, was run into by a motor-van belonging to the defendants, and he received an injury to his ankle.

At Monday's meeting of Evesham Rural District Council seven tenders were received for carrying out the Harvington water scheme. The prices ranged from £1,940 to £2,142, and the tender at the first-named price was accepted. This does not include the work in connection with the crossing of the river. The engineer's estimate for the work, including the river crossing, was £2,195, and the loan was for £2,500 including easements.

Currente Calamo.

The War Office and its timber purchases remain the subject of lively discussion in the House of Commons and elsewhere. From the letters published in *Reynolds's Newspaper* and the *Daily Chronicle*, it would appear that Mr. Meyer hoped later on that his firm would be appointed "official purchaser" for all Government contracts. In his letter of Oct. 16, 1914, to Mr. F. Baines, the principal architect to the Office of Works, he says:—

With reference to the interview which my partner Mr. Williams and I had with you this afternoon, we should like to confirm our offer to act as purchasing agents for yourself, putting all our expert knowledge at your disposal, on the terms of commission mentioned to you—viz., 2½ per cent. on the actual proved cost.

I expect to hear from you on the subject either to-morrow morning or Monday, but before closing this letter I should like to assure you that, if this business is given to us for the time being, we shall be your servants. It is not a question of the commission we shall make out of it in the transaction, but we hope later on that the Government will be able to make us their official purchasers for all timber required on Government contracts, for railways, and for any undertaking for which they may require wood.

You can imagine what an enormous saving this would be to the country. The firms with whom you place your building contracts would have their timber at a very considerable reduction on the price they have to pay for it now, and the size of the purchases which we should be enabled to make would be so vast that the prices we should obtain for you would be lower than those obtained by any other firm in existence. The proposition we are putting before you is bound to be right for you, and, if we give satisfaction, as we are sure we shall, in this business, we hope to get the whole of the Government's work in the future.

The letter of Mr. F. Baines, in reply, dated Oct. 19, 1914, seems to have accepted Mr. Meyer's proposals in toto, with various stipulations as to methods of payment, notice of termination of the arrangement, etc. The following seems the gist of the letter:—

Further, with reference to the matter which we have discussed with you relating to the question of the purchase of a considerable quantity of timber by you for us under commission, I now place on record our acceptance of your offer to purchase the quantities of timber shown on the attached list to the scantlings specified as near as possible, of a quality suitable for the object we have in view—viz., Army hutting, on the following conditions:—

It is agreed that you purchase on our behalf the timber as specified on the commission of 2½ per cent. on the actual approved value as shown by invoices and contract forms, &c. All demurrage, shippings, dock, and other charges to be borne by us. The agreed percentage of 2½ is to be distinctly understood as the sole payment you are to receive for services in connection with the purchases, and you are to place at the disposal of the two clerks sent from this Department to your office every evidence as to the actual transactions with firms with whom you do business.

They are to have access to all bills, invoices, and correspondence relating to the matter at issue, and you are to supply them with such particulars of the transactions as may be considered necessary—obtaining, if desired, affidavits, &c., from the brokers, agents, merchants, importers, &c., that you obtain nothing in the way of secret commission, bribe, gift, or any consideration whatsoever, over and above the declared percentage we have agreed to grant.

All advantages that may accrue from cash discounts or any other special terms and discounts that are given in any way throughout the transactions are to be given to us.

The pith of the whole matter appears to be the actual saving Mr. Meyer has effected on behalf of the Government for his 2½ per cent. In a "considered statement" purporting to be made by him, and published by some of the papers, he says:—

The Government used to buy their timber by contract with various timber importers, whose profits varied in ordinary times from 7½ per cent. to 12½ per cent. In these times, when the supply of timber in the sizes and quantities required does not meet the demand, that profit would be swelled under the prevailing extraordinary conditions to between 15 per cent. and 25 per cent.

It was a common thing, at the time my engagement was entered into with the Government, for timber merchants to obtain 20 per cent. profit, even on comparatively recent purchases. The vast quantity of timber required by the Government made it absolutely necessary, if the Government wanted to buy on reasonable terms, to avoid paying timber merchants these large profits. The Government had to become timber importers themselves; that what they have done, and they are running this business of importing timber for 2½ per cent. on their purchases—the commission paid to me.

Putting the minimum profit which timber merchants in these times must ask at 10 per cent., it is clear that the Government have saved 7½ per cent. on the timber

purchased through my firm; but the saving I admit has been much larger. If it has been 10 per cent. on £600,000 worth of timber we get a total of £60,000, deduct from that commission to my firm at £15,000, and it leaves the very pleasant sum of £45,000 in the pockets of the taxpayers, which otherwise would have been in the pockets of the timber merchants.

On the other hand, a firm at Hull, claiming to be one of the largest importers on the East Coast, in a letter to the *Daily Chronicle*, is of opinion that any first-class timber merchant—or, what would have been still better, a first-class wood broker—would have gladly done the buying for Government account at 1 per cent., in all probability ½ per cent.

Very strong protests were made on Wednesday, at the annual meeting of the Timber Trade Federation at the offices of the London Chamber of Commerce, and the following resolution, proposed by Mr. Alexander Farquharson (ex-president), and seconded by Mr. C. J. Morgan (ex-president), was unanimously carried, a copy being ordered to be sent to the Prime Minister:—

That the members of this Federation, representing all branches of the timber trade throughout the country, protest against, and strongly resent, the unfair aspersions cast upon a large section of the trade by a Minister of the Crown in the House of Commons in connection with the question of the supply of timber for Government purposes, and record their regret that although the Director of Army Contracts stated on December 30 last "that the principle of consulting leading representatives of the various trades on points where expert assistance is useful" had been adopted for some time by his Department, it has not been applied to the case of the timber trade, through the Federation or otherwise.

In the course of the discussion regret was expressed that, although various offers of expert advice, free of charge, had been made on behalf of the timber trade to the Government, those offers had not been accepted.

Naturally Mr. Swift MacNeill got little satisfaction on Monday out of the Treasury with regard to the stoppage this year of something like £100,000 in the grants to numerous art galleries and libraries. Mr. Acland, who replied, said that a reduction of approximately £60,000 has been made in the provision for the financial year 1915-16 in respect of the usual purchase grants to the institutions referred to. These grants are mainly expended on the acquisition of pictures and objects of artistic or antiquarian interest, and in the present crisis, said Mr. Acland, "I think it reasonable to forego expenditure of public money for such purposes." The lordly style which junior Ministers more and more affect when snubbing questioners is really delightful. "I think it reasonable" is warranty enough for anything. That we should cut off neutral supplies while German officers have to be lodged in palatial converted mansions, and billiard tables provided for their sergeant-majors is possibly one of the consequences of the spread of German "culture," which is evidently catching since Lord Haldane found his spiritual home!

Subject to his Majesty's approval, it was unanimously resolved by the special general meeting of the Institute held last Monday to present the Royal Gold Medal this year to Mr. Frank Darling, architect of Toronto, Canada, for the excellence of his executed works, some of which we have illustrated. Mr. James Macgregor, of Dunfermline, was elected associate, and Mr. Walter Peacock, M.V.O., treasurer to the Prince of Wales, was elected hon. associate. The chairman, Mr. J. Alfred Gotch, V.P.R.I.B.A., directed attention to the Soane studentship special drawings, by Mr. Alick G. Horsnell, shown in the gallery as the sketches made by him during his Continental tour (1914) in France

and Italy. The collection certainly displayed a considerable variety of subjects, and an artistic appreciation of the picturesque. Besides the pictorial sheets, some measured studies were included, and sketch-plans plotted on the spot. We particularly noted a very pretty crisp water-colour of a late Gothic portal from Vernon, and some chalk sketches from Bologna and Brescia, executed with much spirit without too much labour.

The Courts (Emergency Powers) Act, 1914, was passed to provide that judgments and orders should not be harshly enforced against debtors during this war time. In fact, it gave the Courts power to stay executions and so to extend the effects of the moratorium after that had lapsed. The Act also declares that "no person shall realise any security (except by way of sale by a mortgagee in possession)" without first making an application to the Court for leave to do so. This exception clearly applied to cases where a mortgagee is in possession of property, and which he is thus left entitled to sell without leave, as before. But the legal term mortgage comprises many things besides the usual mortgages upon land and houses. It includes a charge upon stock, debentures, shares, or book debts, such as is often given by a debtor, or a builder or other trader, to cover an advance to his bank or creditor. A case decided in the Court of Appeal last Monday (*Ziman v. Komata Reefs Gold Mining Co., Ltd.*) is of much importance, because it decides this point plainly. The plaintiff had deposited some shares in a company with the defendants as security for a loan in January, 1914, upon a memorandum agreeing that the defendants could call in their money at 60 days' notice. They had given this notice, and were proceeding to enforce their charge by selling the shares, when the plaintiff applied for a restraining injunction on the ground that they could not do so without leave of the Court. The Court of Appeal last Monday confirmed the judge below in refusing this injunction, holding that the defendants were mortgagees in possession of these shares, and so could sell them under this exception contained in the Emergency Powers Act.

Councillor Ross Clyne again moved his resolution, on Wednesday at the Manchester City Council meeting, for the appointment of a special committee to inquire exhaustively into the present methods adopted in connection with civic architectural matters, with a view to possible improvements in efficiency and economy, and to advise the Council with regard to the advantages or otherwise of utilising the services of architects in private practice, and thus enabling the city architect to devote himself to advisory and supervisory work. He suggested that if local architects were invited to appear before the committee, they could prove that buildings erected had been too costly, and the design too limited, and that greater results might be obtained at less cost. After considerable discussion, the resolution was carried by a large majority, as was also another resolution by Councillor Westcott, asking for a full report of the dealings of the Council with regard to the Infirmary site, with a view to arriving at an early decision as to the best means of utilising the same. We heartily wish early success to the labours of those charged with the matters covered by both resolutions. All who have followed our frequent references to both matters will admit their urgency.

PROFESSIONAL AND TRADE SOCIETIES.

GLASGOW ARCHITECTURAL CRAFTSMEN'S SOCIETY.—The members of the Glasgow Royal Technical College Architectural Craftsmen's Society held a meeting on Friday, 6th inst., when Mr. R. W. Horn, A.R.I.B.A., of the city engineer's department, gave a paper on "Cheap Cottages." The lecturer showed how a belt of land round the present area of Glasgow could be laid out to accommodate a very large population housed on the cottage principle. He drew comparisons between the cost of housing in the tenement as against the cottage system, and analysed the factors contributing to this difference. Mr. Horn discussed the advantages and disadvantages of the English cottage system, and pointed out reasons why it was not universally adopted in Scotland, and suggestions were given as to relaxation of by-laws and simpler construction which might tend to foster the building of cheap cottages north of the Tweed.

FACULTY OF SURVEYORS OF SCOTLAND.—The second annual meeting of the Faculty of Surveyors of Scotland was held in the Christian Institute, Glasgow, on Friday. Mr. Howatt, president of the Faculty, presided over a large attendance of members. The president, in moving the adoption of the annual report and accounts, referred to the work which the council had performed, and to the considerable addition to the membership of the Faculty during the past year. The report and accounts were adopted. Mr. Howatt, on demitting office as president, received a cordial vote of thanks for the valuable services he had rendered to the Faculty during his year of office. The following office-bearers for the session 1915 were elected:—President, Mr. Alan K. Smith, 44, Queen-street, Edinburgh; vice-president, Mr. John Baxter, 243, St. Vincent-street, Glasgow; secretary and treasurer and secretary of the examining board, Mr. D. E. Wallace, C.A., 59, George-street, Edinburgh; general council, James Barr, T. Fairbairn, William Gaudie, William Howatt, Robert Jordan, F. H. Lightbody, John Murray, R. Murray, Anthony Purdie, George B. Walker, Arch. B. Watson, John Webster.

LEEDS AND WEST YORKSHIRE ARCHITECTURAL SOCIETY.—A general meeting of the above society was held at the Leeds Institute, Cookbridge-street, on Thursday, February 18, when a paper on "Wren" was given by Mr. J. H. Farrar, A.R.C.A. (Lond.), illustrated with lantern-slides. The president, Mr. G. Fredk. Bowman, occupied the chair. The lecturer, in the course of his remarks, dealt rather upon Wren's personality, and his place in history, than the range and quality of his works. Members of the Wren family had served in spiritual and temporal offices to the Crown as early as 1600. Matthew Wren, Lord Bishop of Ely, and his brother Christopher, father of the immortal Sir Christopher, both suffered persecution at the hands of the Long Parliament, Bishop Matthew being confined in the Tower of London for several years, until the Restoration. It was for this same Matthew Wren, as president of Pembroke Hall, Cambridge, that Christopher carried out his first architectural work—the new chapel there. He was then over thirty years of age. Up to this time he had applied himself chiefly to scientific pursuits, having been professor of astronomy at Gresham College, London, and at the University of Oxford. He was skilled in mathematics, and a prolific inventor. It was during the year of the Plague that Wren made his only visit to the Continent, when he journeyed to Paris to a Congress of Arts. Here he met Bernini, who was at work upon the Louvre, and Mansart and Perrot. After a stay of six months he returned to England, and in the following year the Great Fire swept away the Medieval town of London, and presented to Wren the opportunity for the creation of a new and beautiful city. Unfortunately, the parsimony and stupidity of those under whom he had to work prevented most of his dreams from complete realisation; but, despite his limitations, by skill and

forethought he converted London from a stuffy, plague-ridden city of the Middle Ages to an airy, modern town of brick and stone. The lecturer went on to analyse the details of Wren's great task, more particularly with regard to the controversy as to what was to be done with the gutted St. Paul's; how he triumphed eventually over his critics, and completed his new church within forty-five years from the date of the fire. Wren's last five years were spent in quiet retirement at his house, near Hampton Court, where he died, after a short illness, at the age of ninety-one. A vote of thanks was accorded to the lecturer on the motion of Mr. W. G. Smithson, A.R.I.B.A., seconded by Mr. J. G. Coombe, A.R.C.A., and carried. At the conclusion of the lecture Mr. Bowman presented Mr. Farrar with a silver tea-service from the members of the sketching club on the occasion of his recent marriage.

ULSTER SOCIETY OF ARCHITECTS.

—The council and the war committee of this society met at the Society's Rooms on Friday, the 26th ult. The president (Mr. N. Fitzsimons) occupied the chair. The war committee reported that up to the present thirteen Ulster architects were serving with the Colours. The February general meeting of the society's members, associates, and students was held at 9, Howard-street, Belfast, on Friday, the 26th ult., at 3.30 p.m. The president (Mr. N. Fitzsimons) occupied the chair. Reports on the work of the new school of architecture and on the work of the war committee were submitted and considered, and the various matters brought forward were discussed by Messrs. R. M. Young, W. J. Gilliland, T. Houston, W. C. Maxwell, A. B. Dobson, and T. W. Henry.

COMPETITIONS.

BARNESLEY.—The competition for new town hall and offices, to be erected by the county borough of Barnsley, has been settled. Mr. Hubert T. Buckland, F.R.I.B.A., of Birmingham, was the assessor. The following is the order of merit as determined by him:—First, Mr. P. H. Topham, Manchester; second, Mr. W. C. Laidlaw, Edinburgh; and third, Messrs. Clough and Morrell, Chelsea, S.W. The corporation has decided to build the town hall from the design placed first, but the plans are to be somewhat amended before the work is actually started.

Mr. McCarthy E. Fitt, master builder and contractor, of Oxford-road, Reading, died on Sunday, aged fifty-six years.

The rural district council of Dartford have approved plans for two hundred cottages to be built on the Collyer's lane estate by the Crayford Cottage Society, Ltd., to whom the Government have advanced a sum of £48,000 at a low rate of interest.

Between thirty and forty members of the Bristol Association of Clerks of Works and Builders' Foremen visited on Saturday afternoon Bristol Cathedral. Canon Talbot, who acted as guide, conducted the party through all the principal parts of the edifice, and also explained, in a very interesting manner, the history of the cathedral.

Affirming a judgment of Lord Dewar, Lords Guthrie and Sherrington, sitting on Saturday as the Second Division of the Scotch Court of Session, held that Messrs. Tom and James Speedy, an Edinburgh firm of estate agents, were entitled to commission as on the sale of a Forfarshire estate in respect that they had implied authority from the seller, a Mr. Stuart, to use particulars of the estate to obtain a purchaser.

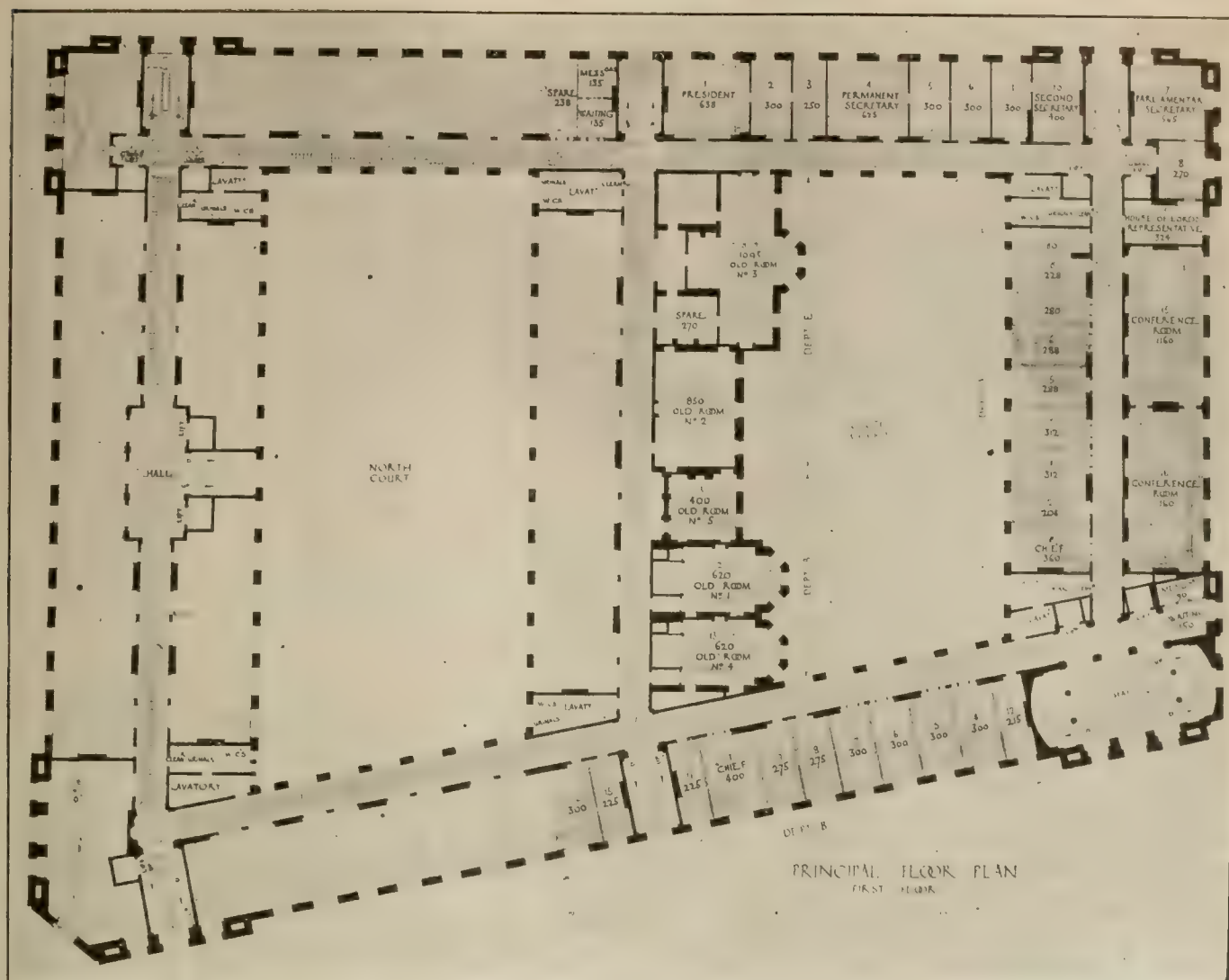
The Middlesex County Council approved on Friday of the principle of two arterial roads—one running from Denham, Bucks, through Middlesex to the Colchester road, and the second from Chertsey, joining the other arterial road at a point in the Edgware road and proceeding to join the St. Albans-road and the Great North road at Hadley Highstone, Barnet. A map was exhibited showing that the suggested routes were of strategic value in that they connected up the military depots on the four sides of the county, and would enable traffic to proceed north or south and east or west, and avoid the congested roads in London.

Our Illustrations.

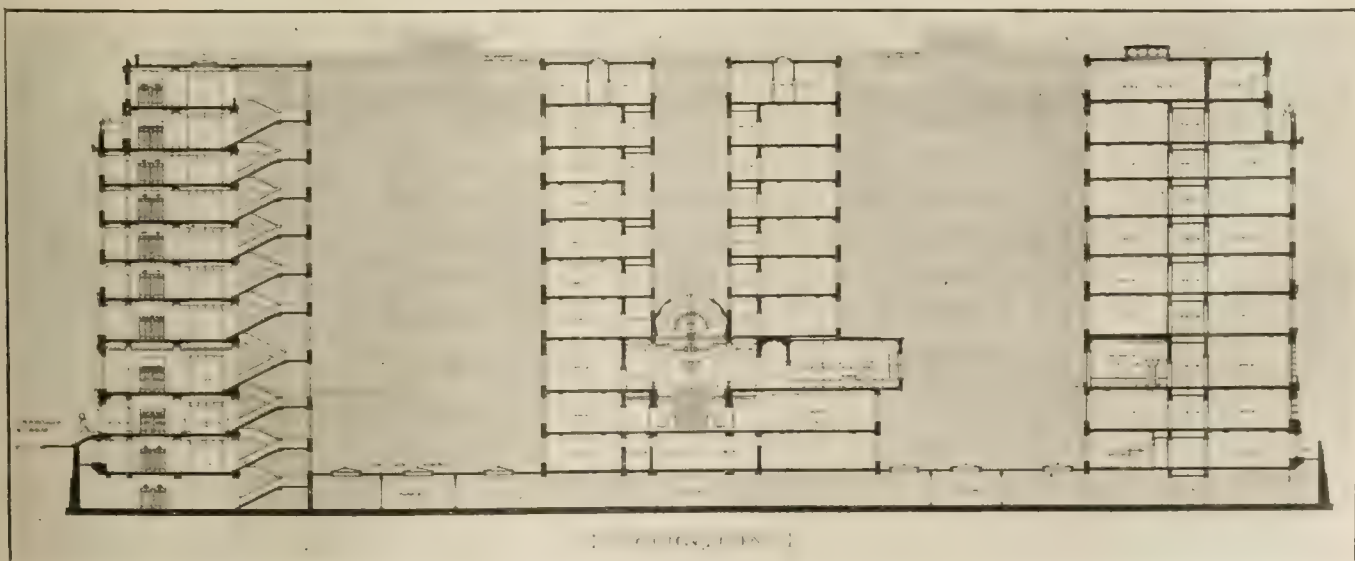
BOARD OF TRADE NEW OFFICES COMPETITION.*

Messrs. Charles Gascoyne and George Nott are the authors of one of the pair of designs which we now illustrate. Both of them were described fairly fully on page 180, when we reviewed all the final competition plans in our issue for February 12th. The drawings reproduced to-day include the capable water-colour view by Mr. Gascoyne, with the Embankment trees tinted in very brown autumn shades, depicting the river front. Above this perspective appears the geometrical elevation, which is further illustrated on the same plate by our copy of the delicately washed-in detail indicating an architectural treatment about which we have already spoken. The section, taken from north to south, includes elevations showing the utilitarian character of the internal quadrangles, with their large windows to every floor. The two plans indicate how amply lit the main corridors are, though individually longer passages going east and west rely on borrowed lights: said to be allowable by subsequent instructions, regardless of the likelihood that these transverse corridors might in consequence be made comparatively dismal, particularly in the absence of end windows unobstructed by stairways. The fallacy of permitting borrowed light in one place and not in another calls for no comment, though, after all, the main question is one of "sufficient light" for all the passageways, and this must be an essential provision for any well-planned building. Fireplaces for the smaller rooms appear to have been overlooked in these plans, contrary to Clause No. 12. Messrs. Percy Thomas, Ernest Prestwich, M.A., and Ivor P. Jones, A.R.I.B.A., joint architects (Cardiff and Leigh) certainly deserve their place among their compeers in this final competition. The central cortile of this plan, leading to the grand staircase, in some ways is rather similar to the reception corridor, which makes so distinguishing a feature in the selected scheme, and which on occasions would prove of much value, particularly when arranged in conjunction with the retention of the old historic rooms so ingeniously managed on the ground floor by Mr. Vincent Harris. The grand hall provided by Messrs. Adams and Holden, and carried up through two floors, somewhat over-emphasised the same idea or its requirements; while, on the other hand, Mr. Edwin Cooper omitted such a provision as altogether needless for a building of this class. Messrs. Thomas, Prestwich, and Jones extend this middle feature through their two main floors, the galleries to it being really corridors, that on the south leading to conference and spare rooms. All the corridors of this scheme are uniformly consistent and fairly well lighted, though the quads are not wide from north to south; indeed, they are too narrow for actual direct light to the four lower stories. The external design recalls the manner of the Pitti Palace, being also cleverly set out on lines justified by other palatial precedents, and above all avoiding meaningless projecting pavilions. Architecturally, the authors have shown commendable restraint, and have added strength to their composition by the rusticated basement and bold breadth of its quoins. Their elevations more nearly approach the standard set by the accomplishment conspicuous in the selected design than either of the other competitors, some of whom appear to have failed conspicuously by overweighting their façades with enormous cornices and perpetual ornamentation, suggesting a top-heavy appearance. This perspective is unfortunate, inasmuch as the artist has failed to express the salient stateliness of this design. For its essentials, the geometrical drawings should be consulted, as

* Illustrations of the selected design by Mr. Vincent Harris appeared in the BUILDING NEWS for Feb. 12, in which number Messrs. Percy Adams and C. H. Holden's design will be found illustrated. Mr. Edwin Cooper's elevation and plan, and the design by Messrs. Ashley and Newman, were given on Feb. 19, and on the 26th inst. we illustrated Mr. Armstrong's design, as well as Messrs. Atkinson and Alexander's scheme.



BOARD OF TRADE NEW OFFICES, VICTORIA EMBANKMENT, S.W.: PRINCIPAL FLOOR PLAN.
Design by Messrs. CHARLES GASCOYNE and GEORGE NOTT, A.R.I.B.A., Architects.



BOARD OF TRADE NEW OFFICES, VICTORIA EMBANKMENT, S.W.: LONGITUDINAL SECTION.
Design by Messrs. PERCY THOMAS, ERNEST PRESTWICH, M.A., and IVOR P. JONES, A.R.I.B.A., Architects.

the water-colour appears to be too restless in its handling to do the building justice. The ground and first floor plans are included among our illustrations to-day, likewise the longitudinal section, showing the width of the light-wells, and setting back of the stone-built attic. The roofing of the central hall,

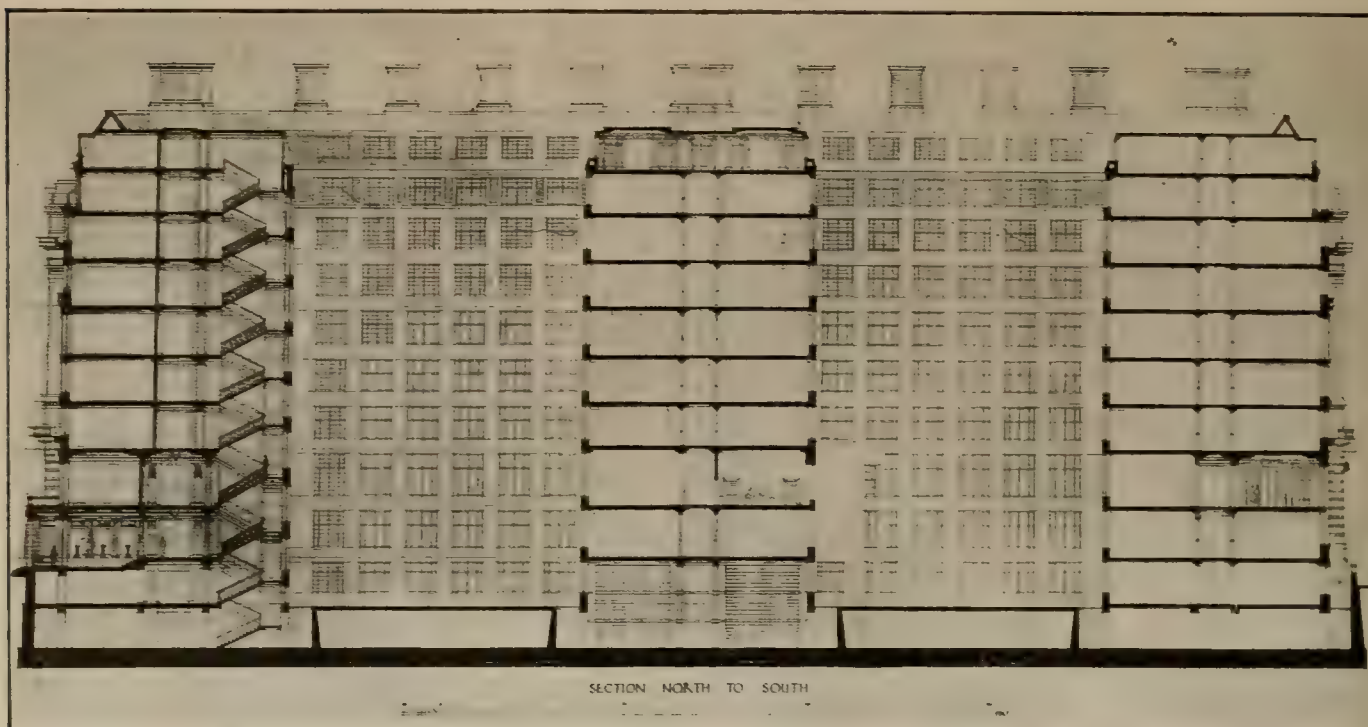
which houses the main staircase, is richly handled facing the western entrance, placed in the middle of the Whitehall Gardens front.

LABOUR EXCHANGE PREMISES.

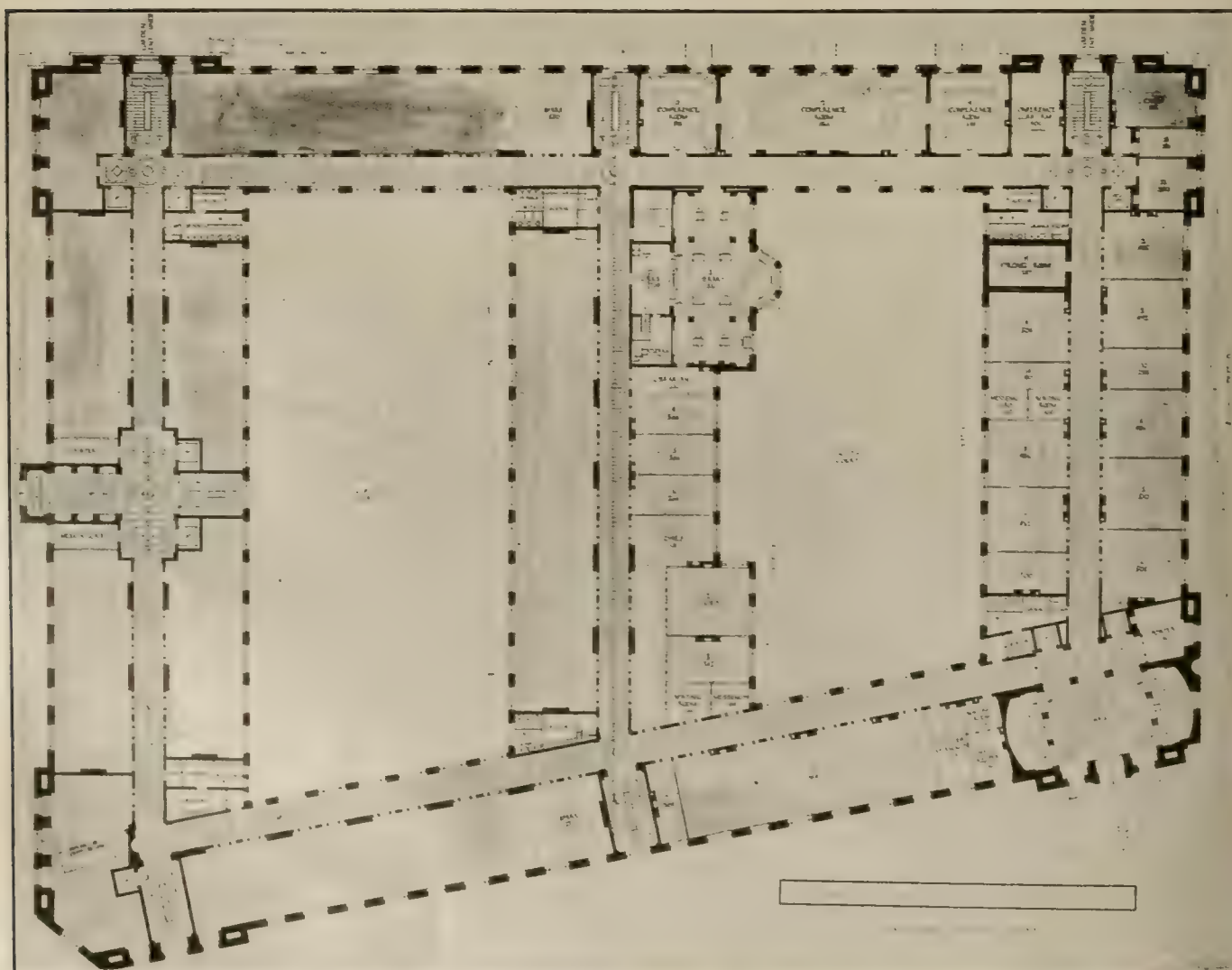
(The description of these designs will be found in the Referee's report on page 262.)

The sanction of the Local Government Board has been obtained by the town council of Irvine to the borrowing of £11,950 for the erection of workmen's houses.

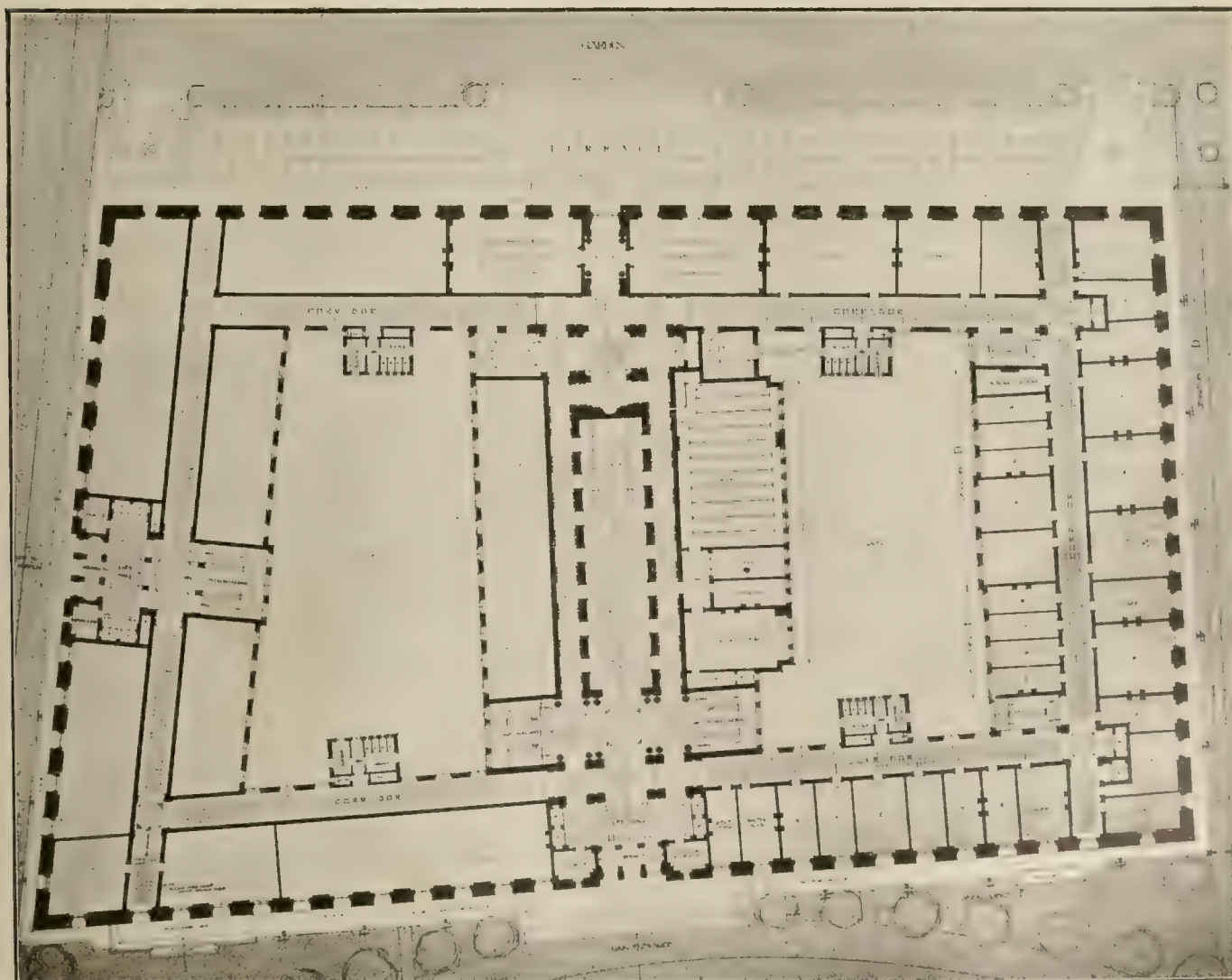
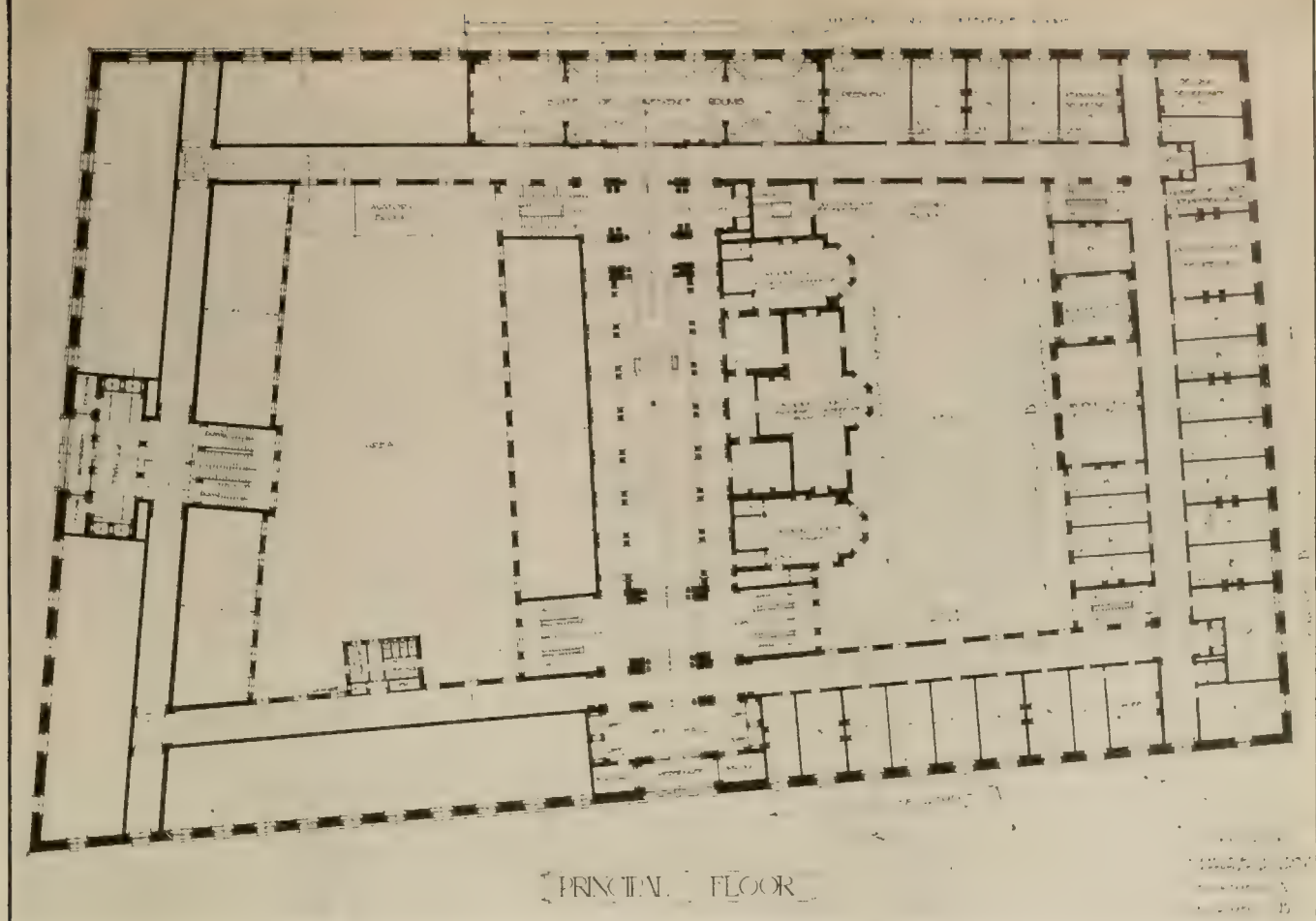
The urban district council of Ince have just received the sanction of the Local Government Board to the borrowing of £17,700 for a sewage disposal scheme.



BOARD OF TRADE NEW OFFICES, VICTORIA EMBANKMENT, S.W.: SECTION NORTH TO SOUTH.



BOARD OF TRADE NEW OFFICES, VICTORIA EMBANKMENT, S.W.: GROUND PLAN.
Messrs. CHARLES GASCOYNE and GEORGE NORT, A.R.I.B.A., Architects.



BOARD OF TRADE NEW OFFICES, VICTORIA EMBANKMENT, S.W.:
Plans of Design by Messrs. PERCY THOMAS, ERNEST PRESTWICH, M.A., and IVOR P. JONES, A.R.I.B.A., Architects

Correspondence.

UNHEALTHY SCHOOLS.

To the Editor of the BUILDING NEWS.

SIR, Judging from the correspondence re cross-ventilation of schools, I imagine that some of your anonymous writers are more or less in a fog, and perhaps have not seen the recently-erected schools in Staffordshire.

We have in Uttoxeter—and I speak from my personal knowledge—perfectly ventilated schools. The Council schools on the heath are spacious, lofty, and well-lighted, being entirely new. They have tall sash-windows, the hoppers of which are about six feet above the floor.

I visited the schools on a cold, windy day, and found no suspicion of down-draughts. Four-inch h.w. piping is carried round each room, near the floor, and there are also two small radiators, with an air-duct from outside, fitted with sliding ventilators. These latter, I think, are unnecessary, as well as expensive.

I know the theory is, that the external air is heated, and comes fresh into the rooms; but this is doing the work twice over. You cannot stop the air around the heated pipes from rising in a continuous stream and mixing with that from the hoppers above.

I enclose copy of the rules hung up for the guidance of teachers. These lucidly explain everything.

I feel sure this system is the last word on school ventilation, and reflects credit on the Staffs Education Committee.—I am, etc.,

S. B. BAMFORD.

Hawthornden Manor, Uttoxeter,
March 1.

Staffordshire Education Committee.

Rules for Ventilation of Schools provided with Sash Windows and Hopper Casements.

1. In Ordinary Weather.—The normal ventilation should be effected by opening all the sash windows at the bottom, on both sides of the room, to such an extent as will effectively ventilate the rooms. It is not desirable to open one window, or one opposite pair of windows, wide, and leave all the rest shut. If more air is required, this can be obtained by opening the windows wider at the bottom. The tops of the windows should be opened for flushing the rooms, or obtaining an extra supply of air in very hot weather when no draughts will be felt. The tops of the windows are intended for extra ventilation, and are supplementary only to the ventilation through the hopper windows. Under no circumstances are the tops to be opened and the bottoms left shut.

2. In Cold Weather.—The opening of the windows should be reduced at discretion.

3. In Windy Weather.—The lower sashes of the windows on the side from which the wind is coming should not be opened to the same extent as those on the other side; but they never should be quite closed. The distance to which the windows on the side from which the wind is coming may be opened should vary in accordance with the strength of the wind.

4. In Very Hot Weather.—The utmost amount of fresh air obtainable should be secured. This is best done by opening the top of the window to the utmost, and the lower half of the window to such an extent as will not interfere with the top. The transition from this state to normal ventilation should be regulated by practical common sense.

GRAHAM BALFOUR, Director of Education.
County Education Offices, Stafford, August, 1910.

SIR, An ounce of practice is worth a ton of theory, and I would respectfully again appeal to all really interested to visit recognised cross-ventilated schools.

For my own part, I have been convinced. It was my duty to modernise a school erected about 1860 having all the advantages put forward by "Anti-Draught," and others. It is now a cross-ventilated school, and the opinion of the head teacher will, no doubt, be of interest: "The ventilation is all that can be desired; the rooms are always fresh, even at the close of the school."—I am, etc.,

AN OLD B.N.D.C. BOY.

not an individual matter at all, but an important public question in which we are all interested, and that it should, therefore, be dealt with publicly and openly, and not in the rather secretive fashion indicated. In any case, I, personally, could gain no further enlightenment in regard to cross-ventilation than I already possess, as I have, I believe, a fairly complete acquaintance with its application, and its results so far as its effects on children are concerned. The data acquired from these investigations will be at the disposal of the proposed Royal Commission, if required, and may prove a revelation to those members of school committees who have employed cross-ventilation who may be called upon to give evidence before the Commission, and which, I trust, for the sake of the children, may be soon. One thing, however, is quite certain—that after the exposure in your valued columns of the evils of cross-ventilation, they will be unable to plead ignorance of those evils.

A well-known London physician and sanitarian, when recently discussing the subject with me, said, referring to the supposed principle of cross-ventilation—if it has a principle—that if it were not hygienic, it was at least eugenic, and that he had a suspicion it was a cunning device of the Eugenists to eliminate the weaklings. How far he was in earnest or in jest I leave to your readers to decide. Mere academic pronouncements and pious opinions, which are all we have had, so far, from the advocates of cross-ventilation, have no value at all, and cannot be accepted in proof of its efficiency, and if they are unable to advance more than vague and nebulous beliefs, the only conclusion that can be come to is that they have no other evidence to offer. They appear, indeed, to have no more to say in justification of their faith in cross-ventilation than that it is great, and they are its prophets; not another word can be got out of them as to why their god is great, or how it achieved its greatness. Do they abstain on the principle that "fools rush in where angels fear to tread," and have not the courage of their convictions; or is it merely that they do not know? It looks suspiciously like it. All they have as yet advanced in support of cross-ventilation is the unsupported assertion that it is better than mechanical ventilation, which, if true, merely proves that mechanical ventilations is even more inefficient than was generally supposed.

One of its advocates has described cross-ventilation as "a perfect blizzard," and as a draught-producer it certainly could not be beaten. Another says, "On one subject—the extreme danger of draughts—everyone must agree, and many people can speak from bitter experience. . . . If the cold air is admitted through the window in an upward direction, it will rise to an extent varying with the velocity of entry, and then, by gravitation, begin to fall"; or, in other words, there is a down-draught, regarding the danger of which Mr. Wynne Thomas says, "I have not disputed the fact of down-draught being 'a crying evil,'" all of which can hardly be taken as favourable to cross-ventilation, which admittedly consists of through-draught and down-draught. If the cold entering air did not descend—that is to say, if there were no down-draught—with cross-ventilation it would be foul air only that would be inhaled in the breathing zone. No possible adjustment of the windows to any angle whatever, nor method of regulation, could prevent the cold air from meeting with the warm ascending foul air, and descending by its own gravity. It is a law of nature, and cannot be opposed with impunity, and any attempt to do so—as with cross-ventilation—is merely to court failure and disaster.

The fact that cross-ventilation does not provide pure air at breathing level, but diluted foul air only, and that the ascending warm vitiated air is returned by the descending current of cold air, and is rebreathed before removal, and that the less perceptible the down-draught, the fouler the air is from insufficient dilution, incontestably demonstrates the inefficiency and the danger of that plan. Only what would prove to be a wholly unsupportable down-draught could

possibly prevent the hot foul air from ascending a certain height above the head before being forced down and returned for rebreathing.

The vital defects of cross-ventilation are clearly pointed out in the following extract from "Anti-Draught's" letter in your issue of January 29, and as these very serious statements have not yet been controverted, should they remain unanswered, cross-ventilation will stand condemned, and its advocates forfeit all claim to be accepted as authorities on ventilation.

Crude, unbalanced, and unscientific attempts to solve a problem which, as Parkes says, "requires the study of a lifetime to master, and the greatest engineering skill to deal with its intricacies," can have only one result—failure and disappointment. "The fundamental defects of this plan may" (says "Anti-Draught") "be stated as follows: (a) No provision is made for the extraction of the heated expired air at the higher levels, to where, under normal conditions, it naturally ascends, and from where it should, therefore, be withdrawn. (b) A continuous downward current of cold air from open windows, or, in other words, a 'down-draught.' (c) Cooling and returning to be rebreathed, the ascending, heated, expired air. (d) Condensation and precipitation on to the children of the moisture with which expired air is heavily charged. (e) Condensation and precipitation on to the children of the moist and poisonous exhalations from the body. (f) The creation of acute differences in the temperature of the body occupying a superheated stratum of air and drenched from above with cold air."

This grave indictment of cross-ventilation is precise, specific, and definite, and if its promoters, who are now challenged, are unable to meet and to controvert these damning points of accusation, so clearly formulated, and to substantiate the claims they make for that system—if any—then judgment in default will be passed upon them, and it will not, I think, be difficult to prognosticate what that judgment would be.

—I am, etc.,

CALORIC.

Intercommunication.

QUESTIONS.

[13139].—FACTORY CHIMNEY.—I am asked to prepare plans for the erection of a factory chimney, to accommodate five Lancashire boilers, 30ft. long by 8ft. diameter, the chimney to be about 180ft. high. What would be the best internal diameter at the base, and also at the summit? The chimney is to be built on bad ground, which is waterlogged, and the depth of the gravel bed from the surface is about 14ft. Would it be possible, and cheaper, to either drive down reinforced-concrete piles, or telescopic-form piles, which would support a reinforced-concrete raft, to carry the chimney? Any information, or sketches on the subject, will be much appreciated.—E. C.

A Local Government Board inquiry was held on Wednesday at the town-hall, Newcastle-on-Tyne, to consider an application to borrow £29,700 to make public baths at Heaton, Benwell, and Walker.

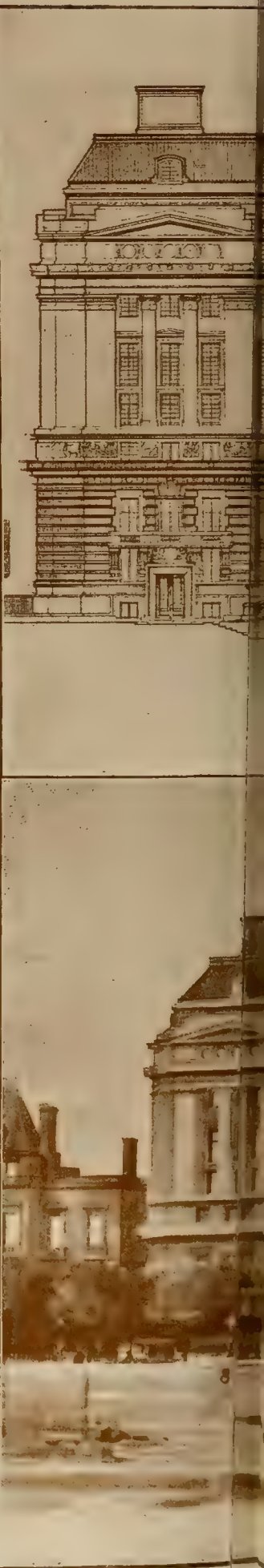
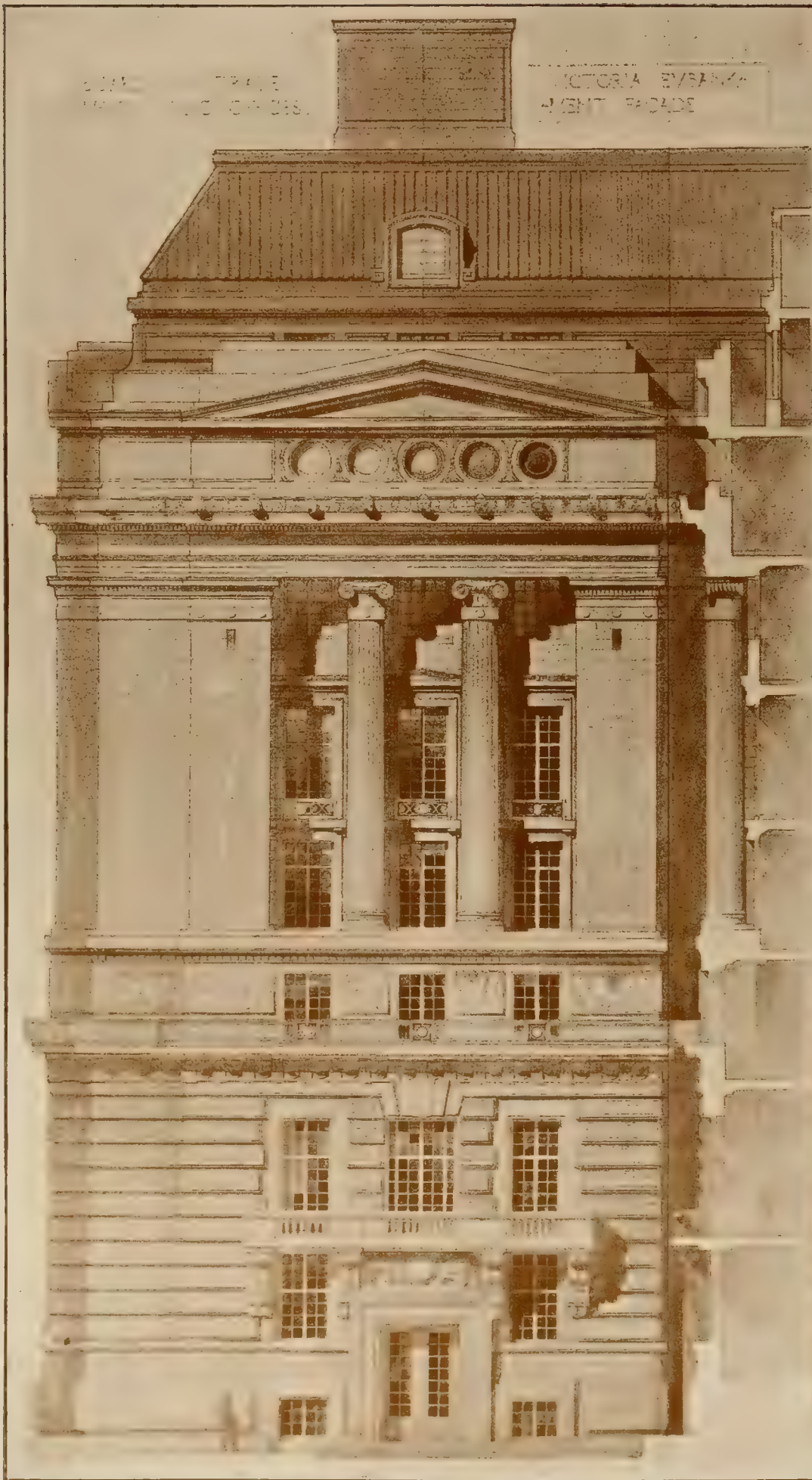
Rotherham Town Council have appointed Mr. Thomas Peel Collinge, A.M.Inst.C.E., who since 1908 has been borough engineer of Mansfield, and was previously deputy borough engineer at Carlisle and at Nelson, to the post of borough and water engineer, in succession to Mr. E. B. Martin, at a salary of £500 a year, rising to £700.

The Roman Catholic Archbishop of Dublin has definitely decided not to build a cathedral on the Ormond market site. His Grace was offered the Ormond Quay site for £12,000 by the corporation. The housing committee of the corporation have directed the city architect to proceed with all despatch with the scheme for the erection of artisans' dwellings on the area.

The Local Government Board have declined, after inquiry, to sanction the proposed scheme for works of sewerage at Wootton Bassett, involving an outlay of £1,200. The board are of opinion that the works proposed would only partially remedy existing defects. They suggested that the rural district council should consult an engineer of experience and obtain a report on the mode of carrying out the necessary works.

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BOARD OF TRADE NEW OFFICES, VICTORIA EMBANKMENT
Messrs. CHARLES GASCOYNE and G

U.S., MARCH 5, 1915.

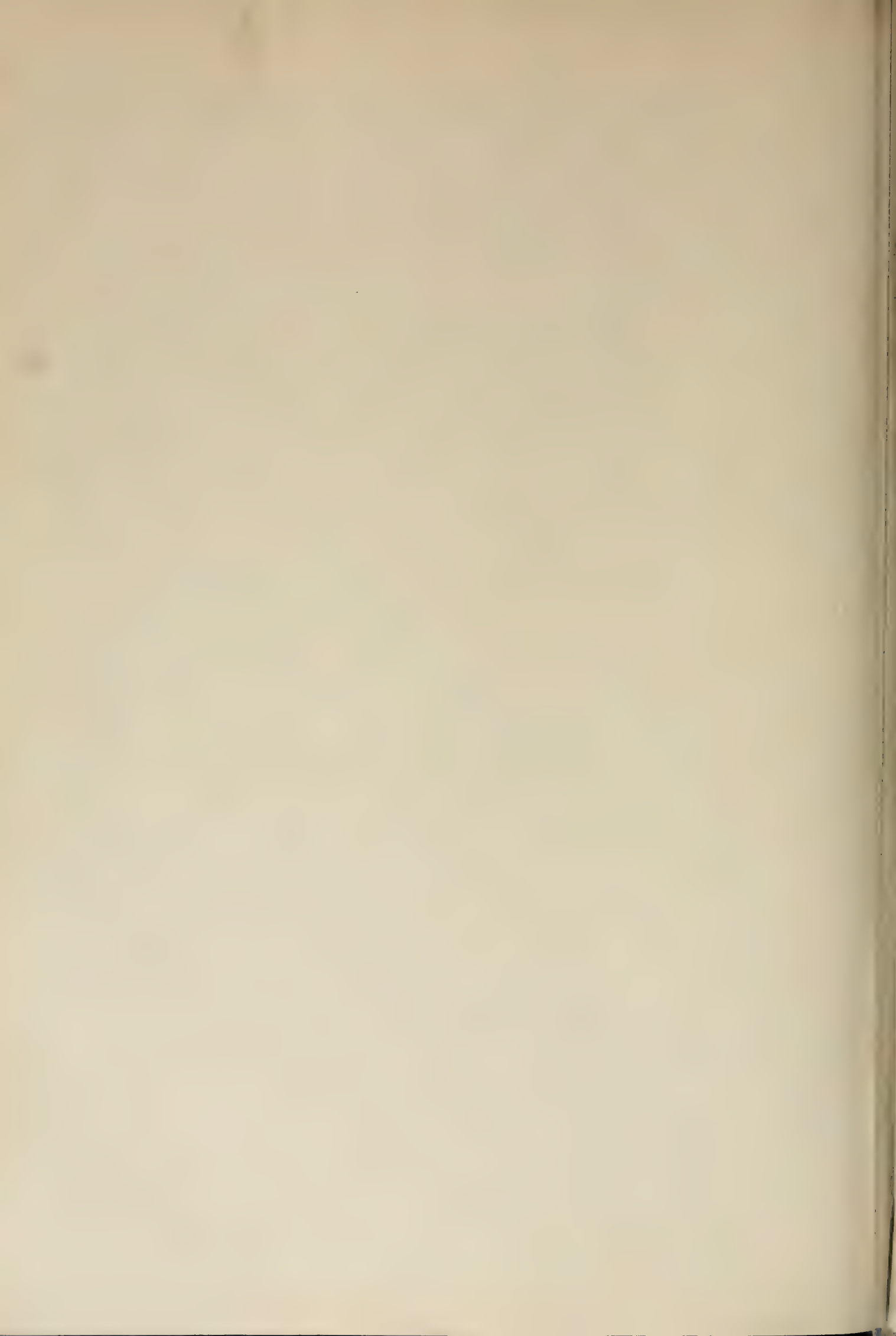


ELEVATION TO VICTORIA EMBANKMENT

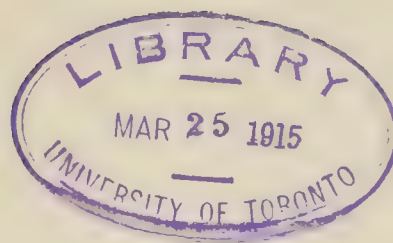


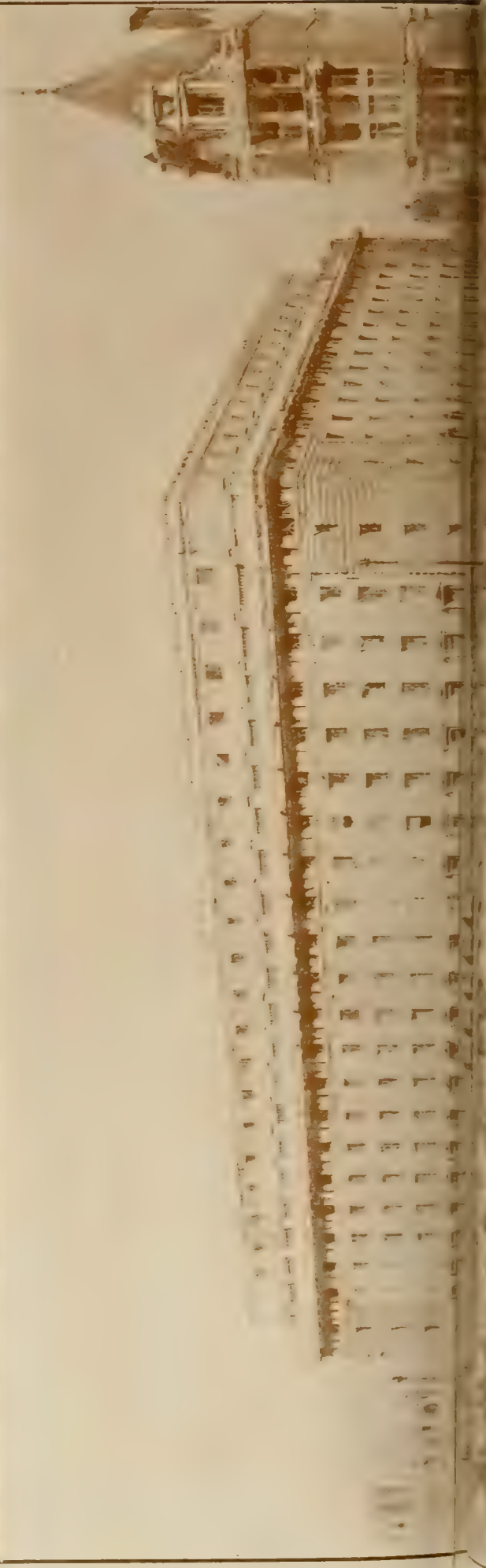
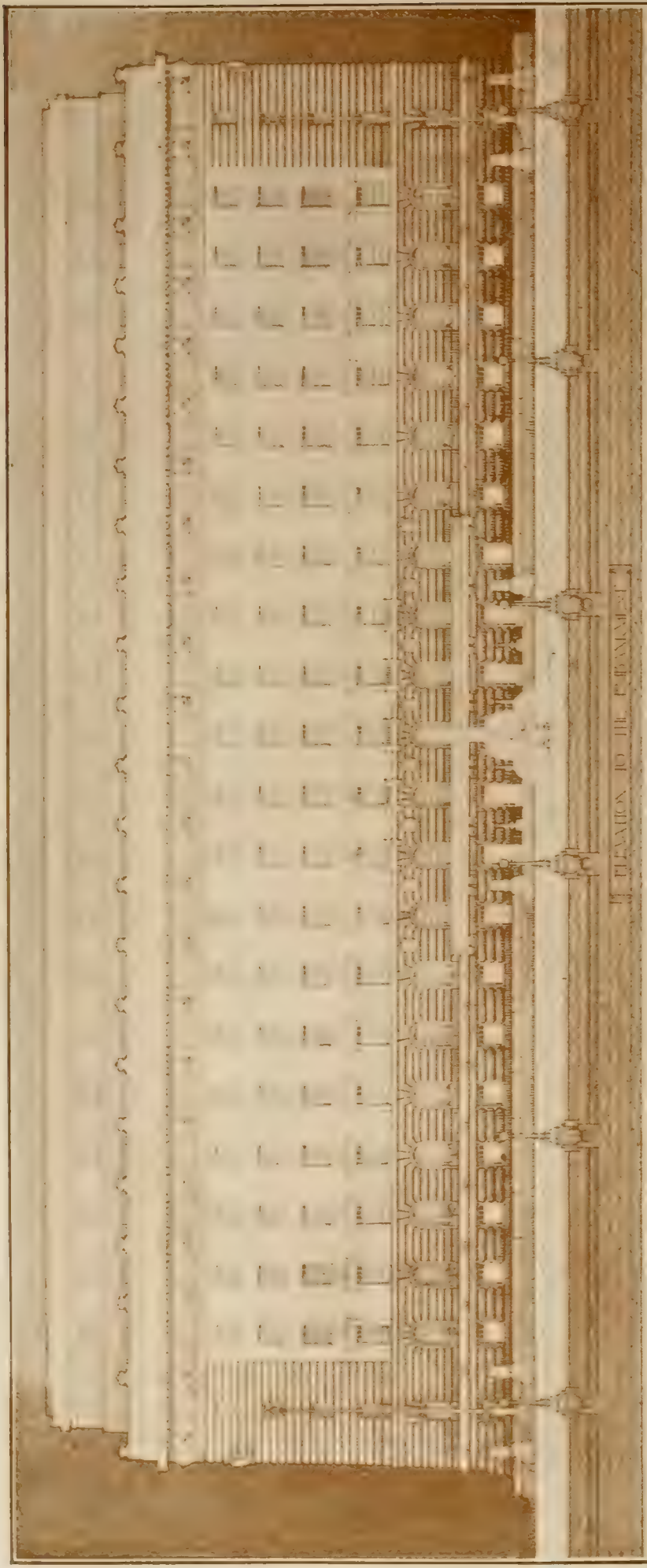
W.: DETAIL. RIVER FRONT. AND PERSPECTIVE VIEW.

ORE NOTT, A.R.I.B.A., Architects.



277-280

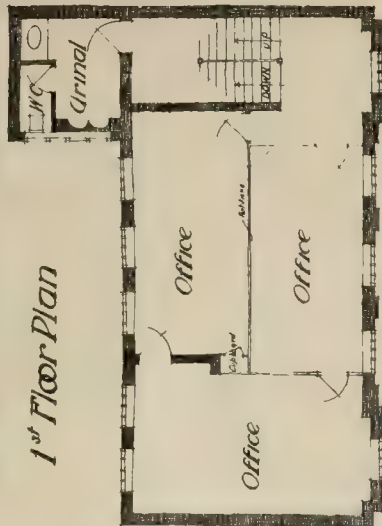




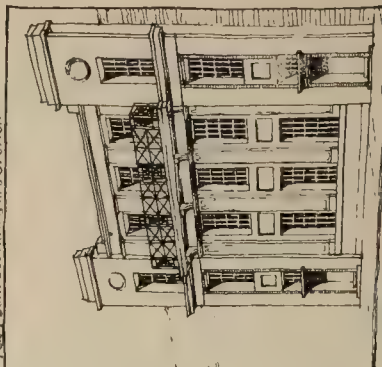
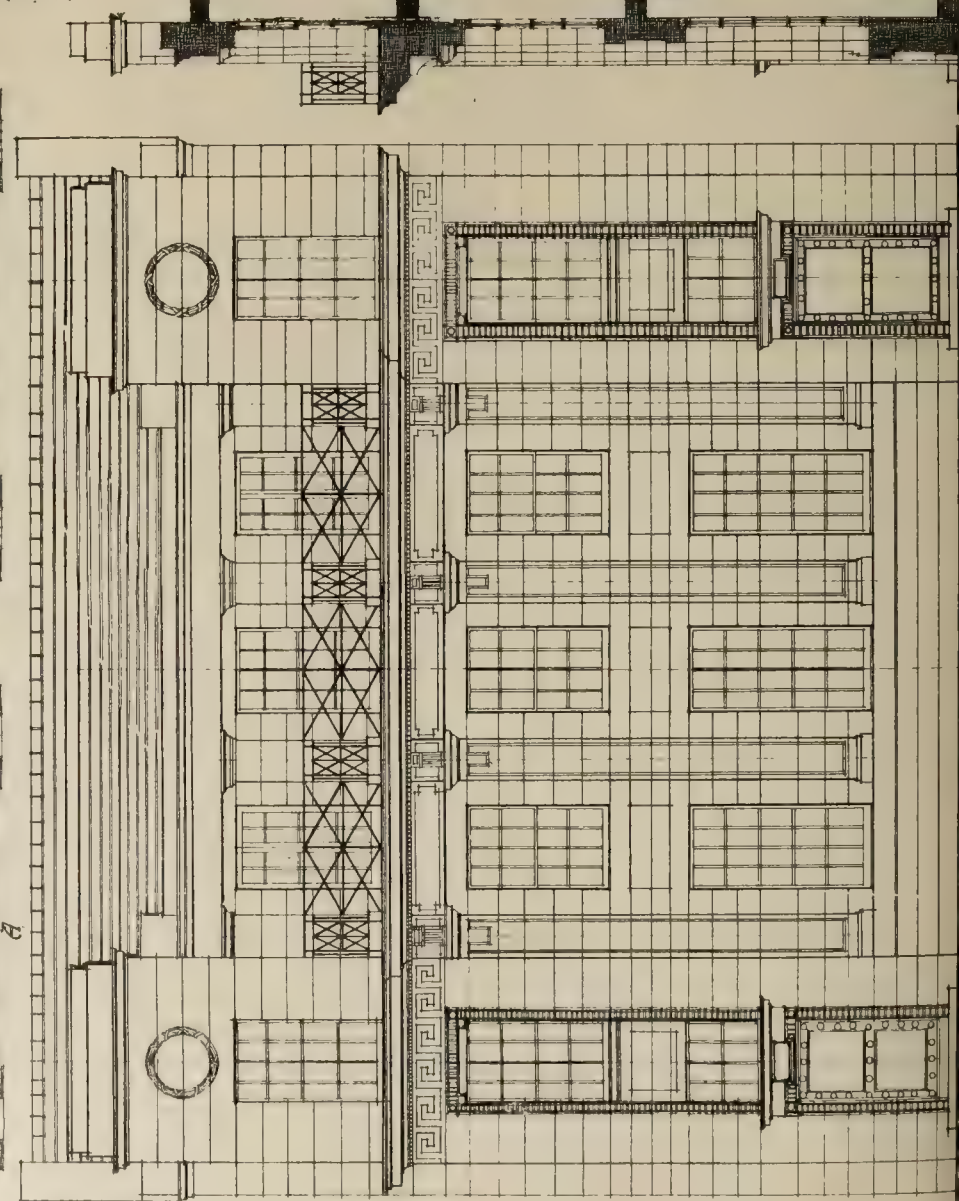
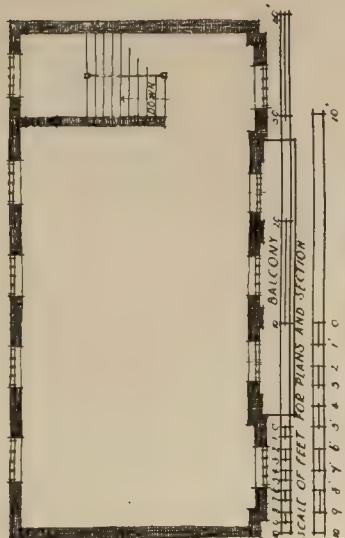




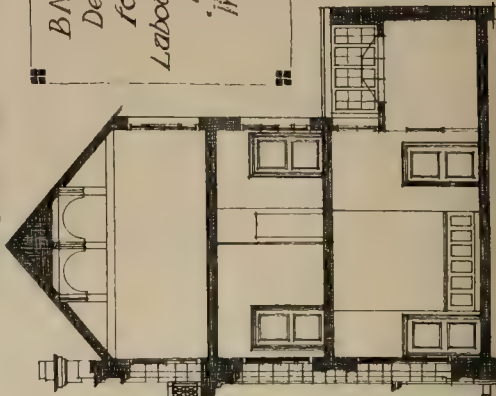
1st Floor Plan



2nd Floor Plan



BNDC
Design
for a
Labour Exchange
by
Why
2 1/2



Section of Front Wall

Front Elevation

DI AGEDER ST.

B N D

A SMALL
LABOUR EXCHANGE PREMISES
as September Morn

JAN 1, 1915

SUBJECT 42

Section

Front Elevation

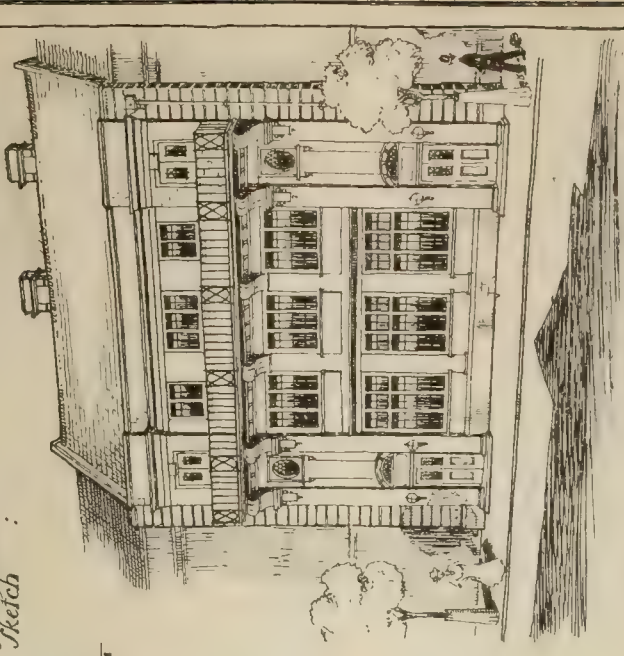
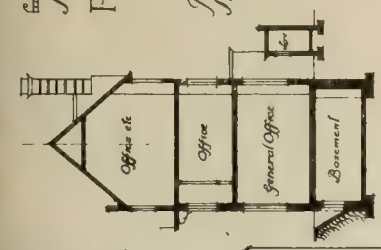
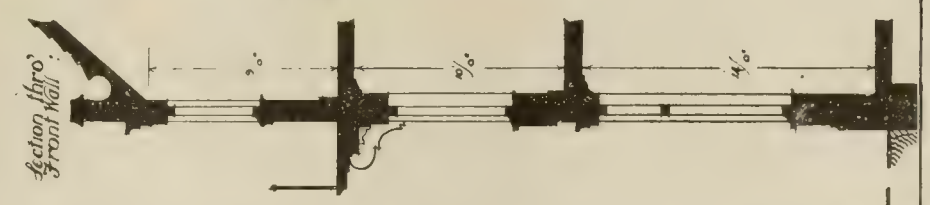
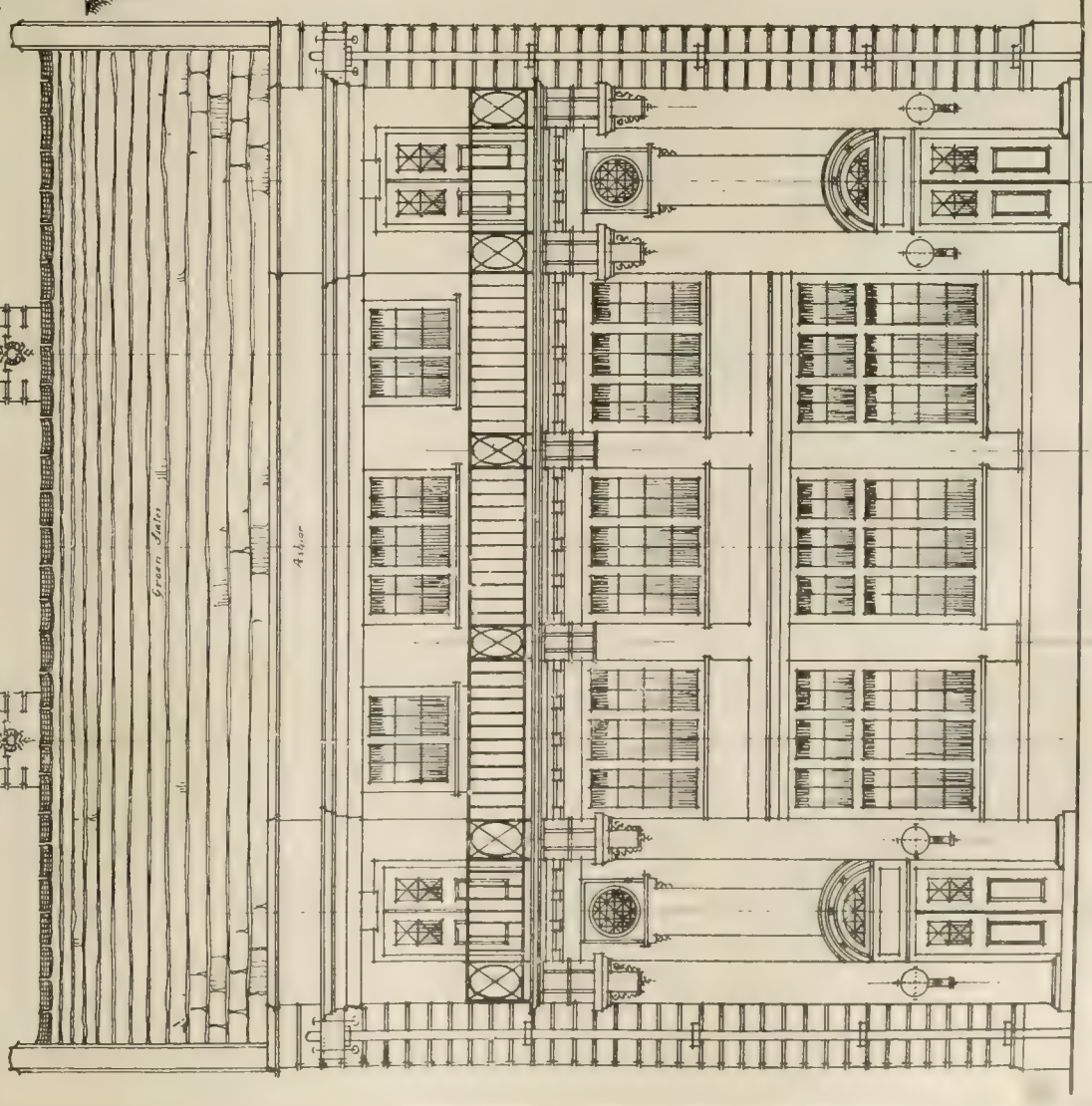
Ground Plan
Other Plans etc

PLACED SECOND

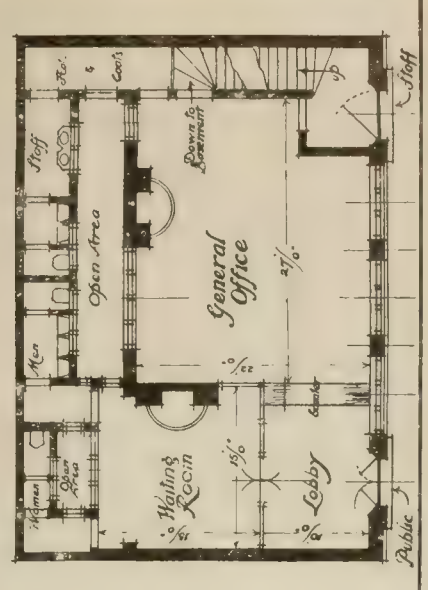
Perspective
Sketch

First Floor
Plan

Second Floor
Plan



Ground Floor
Plan



"BUILDING NEWS" DESIGNING CLUB: A LABOUR EXCHANGE.
Designs by "WHY" (Placed First) and "SEPTEMBER MORN" (Placed Second).



PARLIAMENTARY NOTES.

TIMBER FOR THE WAR OFFICE.—On Feb. 25, Mr. W. Young (L., East Perthshire) again raised the question of Mr. Montague Meyer's contract for the purchase of timber for the War Office, declaring that it was extravagant and unbusinesslike and against the public interest, although a remarkably good piece of business for the fortunate purchasing agent. It was alleged that the large timber merchants had made an attempt to squeeze the Government, when Mr. Meyer, brimming over with patriotism to the tune of £60,000 or more a year, was appointed. Plenty of timber merchants and brokers of the highest standing in the trade would only have been too glad to do the business for a much smaller remuneration; but bona-fide offers made to the War Office were either rejected or not even replied to. Mr. Harold Baker's statement that the War Office and the Office of Works were not aware that the purchase of timber would be on such a large scale appeared to be a pure evasion of the whole matter, and a very lame excuse for the blunder that had been committed. The official who made the arrangement ought to be transferred to some other department where he would not have the power to play ducks and drakes with the country's money. He believed the general feeling of business men was that the agreement should be terminated forthwith. (Hear, hear.) As for the proposed modification of the terms, it was nothing more or less than an attempted imposition on the supposed credulity of Members of the House of Commons.—Mr. H. Baker said the question of responsibility as between the Government Departments was relatively small and unimportant—(cries of "No!")—but as the hon. Member had thrown some doubt on the subject, he would restate the position in regard to responsibility. The War Office came into the transaction at the beginning and at the end. At the beginning they asked the Office of Works for advice, and, having received a suggestion that they should be relieved of the task of timber-buying, they accepted it, and the whole of the arrangements were carried out by the Office of Works. They came into it again at the end in that they received the timber, and on that he could only say that it had been delivered quickly and was of good quality, and the War Office had no objection to the way in which the contracts had been executed. The War Office, having agreed that the Office of Works should act for them in the matter, might be considered ultimately responsible, and it was a responsibility which they cheerfully accepted.—When Mr. Baker resumed his seat, several members on the Ministerial side exclaimed, with surprise: "Is that the answer? Is that all?"—Mr. J. F. Hope (Sheffield Central, Opp.) said that in times like this mistakes must needs arise; but when they did, it was the duty of the House to brand them as such, and take steps to prevent their recurrence. The system by which payment of a commission two and a half times as much as the custom of the trade allowed was altogether wrong. At least the commission under this contract would come to £35,300, which was three years of a Lord Chancellor's salary, or the salary of six Prime Ministers.—Sir H. Dalziel (L., Kirkcaldy Burghs) said it was desirable that the matter should be cleared up, because this was not the only question of the kind that gentlemen on the Treasury Bench would have to reply to. He admired Mr. Meyer's business capacity, and he wished there was more of it on the Treasury Bench. There was no precedent for a commission of 2½ per cent. being paid; 1 per cent. was accepted in the trade. Insufficient inquiry was made before Mr. Meyer was appointed. It was said that Mr. Meyer's own stock of timber was taken over by the Office of Works at a loss to him of £2,000. That was merely a sprat to catch a whale, and it was by this display of apparent generosity that Mr. Meyer was enabled to obtain a highly-lucrative appointment.—Sir H. Dalziel complained that the representative of the particular department attacked (Mr. Beck) had not replied. Mr. Baker, who had intervened, had treated the House with rather scant courtesy, and might as well have remained silent. He could tell the Treasury Bench that they would have to answer for other matters of a similar kind, but far more important than the one now under consideration. So far as Mr. Meyer was concerned, he took his hat off to him as a shrewd business man, and only wished that a little of his business acumen was to be found in the Office of Works. (Hear, hear.) It was the contract with Mr. Meyer that was at issue. The inquiries made before the appointment of Mr. Meyer were insufficient.—Mr. Beck said the Office of Works had consulted two hundred firms, and had as many as a thousand inquiries.—Sir H. Dalziel asked where the list of firms had been obtained.

It was not from the War Office, whose list contained the best-known and most reputable firms in the trade. The Office of Works would appear to have rummaged out of the directories. He contended that the Office of Works was not a department which should have such a responsibility. They should have had the best business men in the trade to advise them. They had offers from the best firms in the trade—offers which were not acknowledged.—Sir A. Markham (L., Notts, Mansfield), after expressing sympathy for the representative in the House of the Office of Works in the unfortunate position in which he was placed, declared that a more unbusinesslike contract he had never seen in the whole course of his experience. He understood that Mr. Meyer was a German Hebrew, somewhere in the City, who had not been long in the timber business. He received an inquiry from the Government for the supply of timber, and went down to the Office of Works, and in a few hours afterwards received an order to buy all the timber the Government required at a price which was 100 or 150 per cent. higher than that paid in the trade. In his business as a coal-owner he had to arrange for the purchase of timber to the amount of £100,000 a year, and he estimated that a timber-buyer was worth £500 a year. Any old-established firm, if they had been appealed to, would have helped the Government without charging them a single penny, and there were numerous firms who would have been glad to do the work for £2,000 per annum to cover their standing charges.—Mr. Booth (L., Pontefract) said the subject had not been raised in order that they might be fobbed off on a foggy evening like that. One of the most terrible scandals that had ever occurred in the history of the British Government was being investigated by the House.—Mr. Beck (Lord of the Treasury) said he was authorised, on behalf of the First Commissioner of Works, to say that any business man in the House might go over every detail of the transactions at the Office of Works and see that the profits of Mr. Meyer's business had been testified by a chartered accountant. There was nothing in the least suspicious or doubtful in the case. The whole Board had full knowledge, and took full responsibility. Hon. Members had been rather misled, and they would be disappointed if they expected to find that the case involved a terrible scandal. Timber firms in every part of the kingdom were invited to quote prices and give estimates of the stocks of timber in their possession. The Office of Works formed the judgment that the prices were ruling high, and that the supply of timber was somewhat small. Then Mr. Meyer came forward with his solution, and, after considering various alternative methods, his suggestions were adopted, and he was chosen buyer to the War Office. His work was not merely that of a buyer, but involved arrangements for distribution and other duties. The timber trade might think it unjust that a man with only four years' experience should be chosen, and everything had been done to prejudice the case by vitriolic trade jealousy and prejudice; but he was glad that the unworthy imputations against Mr. Meyer had now been dropped, and he hoped that the House would banish them from its mind once and for all. He had some figures which showed that at any rate there was a *prima-facie* case for saying that money was saved by employing Mr. Meyer. They related to that period prior to wood being declared by the Germans contraband of war, they covered the cost of insurance and freight, and they were average prices taken out of prices given by the great firms. He was assured that no tenders were nearly as low as Mr. Meyer's figures. In one case the average quoted price was £13 14s. 6d. per standard, whereas the price at which Mr. Meyer actually bought was £11 8s. 6d., and in another case the figures were £16 13s. and £12 3s. 4d. respectively. Really, this so-called scandal was not a scandal at all, but a business transaction which did reflect credit upon the departments concerned. (Some laughter.) He did submit to hon. Members that they had been used as tools by men who had been personally disappointed.—Sir H. Dalziel: I have not received one letter.—Mr. Booth: Nor have I.—Mr. Beck said that he still thought that the way in which these charges were made had not much judicial spirit. Though they admitted that the sums earned by Mr. Meyer were large, they were in no sense represented by £15,000 as net profit. Many charges had to be borne out of that sum, and he believed they could show that the sum saved to the country was infinitely larger than anything Mr. Meyer earned.—On Wednesday, Mr. Beck, replying on behalf of the First Commissioner of Works, to Sir H. Dalziel, stated that a new arrangement with Mr. Montague Meyer as timber-buyer for the Government was under consideration; but it was not proposed to make any other contract than that contained

in the letter from the War Office to Mr. Meyer, which could be terminated on any day.—Sir H. Dalziel: Will the hon. gentleman see that Mr. Meyer stops advertising that he is selling the same goods as he is buying for the Government?—Mr. Beck asked for notice.—Mr. Butcher (U., York): Has the existing contract been terminated?—Mr. Beck: No.—Sir H. Dalziel: Does the 2½ per cent. commission still continue?—Mr. Beck: As I understand that the whole matter is to be raised again to-morrow, it will be better to defer any further questions till then.

THE REPAIRS TO WESTMINSTER HALL ROOF.—Mr. Beck, in reply to Mr. King, states that the total cost of the work now in progress on Westminster Hall roof is expected to be slightly over £60,000. The estimates are as follows:—Steel scaffold (erection, demolition, etc.), £3,750; steel reinforcement, £10,530; ditto, labour, £12,285; timber and treatment with preservative, and slating, £13,950; ditto, labour, £14,500; clerk of works' salary (six years) and contingencies, £5,000—total, £60,015.—Mr. King drew attention on Friday to the repair of the roof of Westminster Hall. The most sacred secular building in our history was going to be radically changed as a structure, and, had it not been for exciting public events, an overwhelming body of public opinion would have been aroused against the proposal. If the Government would allow a Committee to go into the matter and report again before the actual structural work was taken in hand, he would be satisfied, and he was confident the result would be different from the extravagant and outrageous proposal now made.—Mr. Beck replied that the hon. Member's protest came too late, a definite contract having been made for the work. It was a wonder that the roof still existed, as it was so much damaged, and it was therefore necessary to lose no time in making it secure. The Member for St. George's-in-the-East explained the situation very fully on the 23rd of last April, and arranged for personally-conducted tours by Members of the House who desired to see for themselves the condition of the roof. He also reminded his hon. friend that the Royal Institute of British Architects and the Society for the Preservation of Ancient Buildings and Monuments were consulted.

WATER SUPPLY AND SANITARY MATTERS.

WORCESTER SEWAGE DISPOSAL WORKS.—The difficulty in the matter of filtration which has arisen at Worcester Sewage Works was considered by the city council on Tuesday. While the sewage can come under treatment satisfactorily the filter-beds have become sealed, and to this question of filtration considerable attention has of late been given, expert advice sought, and visits paid to other works, including those at Coleshill and the main works at Saltley. At each of these a deputation paid special attention to the treatment of sludge. A visit was also paid to Salford. Last month the Local Government Board sent a letter to the city council, and this was considered by the sewerage committee, who recommended that the board be informed that the council had abandoned the idea of dealing with the sewage by means of upward filtration, that a copy of a report by the city engineer be forwarded to the board, and they be told the committee were asking the council to make a trial of steps recommended by the engineer for washing the surface of the filters so as to facilitate their working. This recommendation the council approved, the estimated cost being only £200. It remains to be seen whether these measures will meet the objections of the Local Government Board.

The corporation of Chorley, Lancs. have instructed Messrs. Woodhouse and Howard to prepare plans and estimates for public baths.

Mr. T. N. Sanderson, architect, of Scarborough, is serving as a sub lieutenant in the motor-boat section of the Naval Volunteer Reserve.

Sunday-school buildings are being added to St. Luke's Church, Darlington, from plans by Messrs. Clark and Moscrop, of Feethams, Darlington.

The Chipping Norton Rural District Council are considering plans by Mr. Humphries, C.E., of Oxford, for the sewerage of the village of Charlbury, at an estimated cost of a little over £4,000.

Mr. Acland states in Parliamentary papers that a reduction of approximately £60,000 has been made for the financial year 1915-16 in respect of the usual purchasing grants to libraries, art galleries, and museums.

Our Office Table.

In connection with the fiftieth spring exhibition of the Manchester Academy of Fine Arts, a conversation was held at the city art gallery on Wednesday night in last week, where over 400 guests were received by the president (Mr. John Ely, F.R.I.B.A.) and members of the council. Owing to the restriction of lighting in the city, there will be no evening displays at the exhibition, which continues open throughout March. The landscapes are especially strong this year, among the best works sent in being those by Mr. Anderson Hague, Mr. and Mrs. Elias Bancroft, Mr. W. H. Wilkinson, Mr. James W. Booth, Mr. R. G. Somerset, and Mr. H. Royle.

A fresh appeal is being issued by the Architects' War Committee to the profession for subscriptions to a special fund for the relief of distress among architects and those dependent upon them. In response to this appeal, and to a further appeal issued by the professional employment committee of the Architects' War Committee, subscriptions to the amount of £1,208 8s. 3d. have already been received. There is reason to suppose that distress in the profession, due to the war, is steadily increasing, and that in the course of the present year the position may be a very serious one. It is therefore hoped that all who are in a position to do so will contribute as generous donations as possible to the relief fund. Cheques should be drawn in favour of the hon. secretary of the Architects' War Committee, 9, Conduit street, Regent-street, W.

Mr. G. A. T. Middleton, A.R.I.B.A., of London, conducted a series of lectures at Aberkenfig, Swansea, and Cardiff, on February 24, 25, and 26 last. His subject was, "Some Belgian Towns affected by the War," and was profusely illustrated by lantern-views taken both before and since the German invasion. The lecturer took his audience, by means of the pictures, along the line of the great retreat, and to the sites of the great battles of the present war, and showed to interested audiences the evil effects of "German Kultur" upon the beauties of Belgium and Northern France. Mr. Frank H. Heaven, A.R.I.B.A., of Aberkenfig, was the organiser of the lecture.

The Board of Agriculture and Fisheries have issued a pamphlet drawing attention to the report of the Advisory Committee appointed to consider and advise upon plans, models, specifications, and methods of construction for rural cottages and outbuildings. The committee consisted of Mr. Christopher Turnor (chairman), Mr. Cecil Harmsworth, M.P., Mr. Raymond Unwin, F.R.I.B.A., Mr. Lawrence Weaver, Hon. Associate R.I.B.A., and Mr. C. E. Varnell, A.R.I.B.A. The report of the committee contains illustrations of twenty-three types of cottages for rural labourers. Four are for single cottages (including two bungalows), thirteen are for pairs, and six for blocks of four. The accommodation provided includes a living-room, scullery, larder, and three bedrooms. The designs from which the illustrations in the report are reduced are published separately on the scale of $\frac{1}{4}$ in. to the foot. The price of each working drawing-sheet is 1s., and the drawings may be obtained through any bookseller, with the specifications in each case, for one penny.

Many European towns and cities own considerable areas of forest lands, and as these are in almost every case under the constant care and supervision of qualified foresters, they are a source of steady profit to the communities. An example of this is cited in recent forest notes by the U.S. Department of Agriculture, which states that Zurich, Switzerland, derives an annual income of 7,200dol. per acre from her forests, which results in a reduction in the taxes of 32,000dol. each year.

Presiding at the annual meeting of the shareholders of Messrs. Harris and Sheldon, Ltd., the well-known shop fitters, held at

Birmingham on Monday week, Mr. J. E. Sheldon, the managing director, referred to the condition of the shop-fitting trade during the trying period of the war through which we are now passing. At the outbreak of the war the business, from a shop-fitting point of view, became, comparatively speaking, almost at a standstill, and although the company had had a good year up to the end of July, making a fair rate of profit, since the war commenced this had failed to be maintained; but, in spite of the difficulties met with in adjusting the machinery from the manufacture of one kind of work to another, they had been able to fill up the gap by going in for contracts for the War Office in joinery work, and are receiving further contracts from time to time. The contracts were naturally not so remunerative as they would like them to be. They were, however, glad to be able to keep their staff (who have not volunteered for war service) fully employed, and were able to make provision for such of the seventy odd members of the staff who had dependents upon them, and who had so patriotically come forward to help the country in its hour of need. He was glad to report that the New Year had opened up with a fair amount of shop-fitting business, and they were hoping soon to find the whole of their works engaged upon the manufacture of shop-fronts and shop-fittings, for which they were so eminently suited. Mr. R. Richards was re-elected a director. The dividend of 5 per cent. on the ordinary shares was approved, and a special vote of thanks to the directors and all concerned was passed for pulling the business safely through so strenuous a period.

The University of California is about to grant two new degrees—those of "Graduate in Public Health" and "Graduate in Architecture." Six years' work will be necessary to obtain either of the new insignia. The object of the new course leading to the degree of Graduate in Public Health is to train men and women for the protection of the public against epidemics of disease, and to educate them to be public leaders in the work of making the city, village, and farm healthier places of habitation. The new degree of Graduate in Architecture will be awarded to those who complete a six-year curriculum in the School of Architecture at Berkeley. The Bachelor's degree will be granted at the end of the fourth year, as at present.

Leeming's "Guide to the Income-tax," fourth edition, revised (Effingham Wilson, 54, Threadneedle-street, E.C., 2s. 6d.), will be more in request than ever this year, especially by the many who have to pay for those who escape! We suppose all our readers who pay on the three years' average are aware of the special relief they can claim—or, rather, could have claimed if their account was lodged with the Surveyor before the 28th ult.? It is not too late now to get the allowance by way of repayment, provided the claim is made immediately after April 5 next. The relief is the permission to bring the profits of 1914-15 into the average, instead of those of 1911-12. There is much else in the "Guide" the income-tax payer will do well to study.

Mr. J. Taylor, the borough engineer of Walsall, has just presented his annual report, which states that the work has been affected in many ways by the war. In consequence, many improvement schemes had had to be postponed. The roads were becoming increasingly difficult to repair, owing to increased traffic, and especially to the motor traffic. Tree-planting had been done on many roads, and tar-spraying had been greatly extended. The length of streets repairable by the corporation had been increased by 423 yards, and was now 72 miles 7 furlongs and 22 yards, and 17 miles of new drains had been laid. Plans of 204 new buildings had been approved, against 232 in the previous year. A scheme for working-men's houses had been prepared; but, like other matters involving much expenditure, had been postponed. The sewage-works were completed and in working order, and had been approved by the county medical officer

of Staffordshire. Alterations and improvements had been made at various of the Council schools, and new offices secured for the tramway department. A street was being made to Birmingham-road under the powers of the new Act, and alterations and improvements had been made to many of the corporation's properties.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Victoria and Albert Museum. "The English Home, from Castle to Manor House," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.

Surveyors' Institution. Adjourned Discussion on "The Report of the Land Inquiry Committee on Rating." 8 p.m.

TUESDAY.—Institution of Civil Engineers. "The Improvement of the River Clyde and Harbour of Glasgow, 1873-1914," by Sir Thomas Mason, A.M.I.C.E. 8 p.m.

WEDNESDAY.—Royal Society of Arts. "Patent Law Reform and the War," by J. W. Gordon, K.C.

St. Paul's Ecclesiological Society. "Three Mediaeval Hospitals in London," by A. W. Clapham, F.S.A., St. Paul's Chapter House, E.C. 8 p.m.

THURSDAY.—British Museum. "Early Christian Buildings in Bethlehem," by Banister F. Fletcher. 4.30 p.m.

Royal Society of Arts. "L'Evolution de l'Ecole Belge de Peinture (1830-1900)," by Paul Lambotte. 4.30 p.m.

The Camera Club. "The Campaign Against Fire," by S. G. Gamble A.M.I.C.E. 8.30 p.m.

Sheffield Society of Architects and Surveyors. "The Cathedrals of Amiens and Salisbury," by J. R. Wigfull, A.R.I.B.A.

FRIDAY.—Town Planning Institution. "Some of the Larger Problems of Town Planning," by Thomas H. Mawson, 92, Victoria-street, S.W. 8 p.m.

Glasgow Architectural Craftsmen's Society. "English Renaissance Furniture," by John Edmie. 8 p.m.

Trade News.

WAGES MOVEMENTS.

ELECTRICIANS' DEMAND. The Electrical Trades Union has decided to ask the London Electrical Masters' Association for an advance of wages from 10½d. to 1s. per hour and a reduction in the number of working hours from fifty-three to forty-eight per week.

KNARESBOROUGH.—The master painters of this town have agreed to advance the wages of their employees from 7d. to 7½d. an hour.

Mr. Henry James, senior member of the firm of H. James and Sons, builders, Cobham, Surrey, has died at the age of seventy-one.

The visiting committee of the Croydon Mental Hospital have adopted an extension scheme, estimated to cost £2,000. Beds for 200 additional patients will be provided.

The death is recorded of Mr. D. Judd, builder, Norbiton, Surrey, at the age of sixty-three. He was for eighteen years a member of the Kingston-on-Thames Town Council.

Mr. Henry Rofe, M.Inst.C.E., senior partner of the firm of H. Rofe and Son, consulting engineers, widely known in connection with water-supply undertakings, of 8, Victoria-street, Westminster, died on Tuesday last, of pneumonia, aged seventy-six.

The corporation of Southampton received at their last meeting a letter from the Local Government Board forwarding sanction to the borrowing of £3,116 for the construction of roads in connection with the provision of working class dwellings at Hollybrook.

La Société des Architectes Diplômés par le Gouvernement has conferred upon the President of the Architectural Association the right to be a Corresponding Member during his term of office. Mr. Gerald C. Horsley, F.R.I.B.A., Past-President of the Architectural Association, has by the same decision been elected a Permanent Corresponding Member.

The Staffordshire Education Committee decided on Saturday to accept the tender of Mr. T. Godwin, of Hanley, for £19,663 for the erection in Stone-road, Stafford, of the Staffordshire Farm Institute, subject to the approval of the final plans by the Board of Agriculture, and to the consent of the Treasury. The total cost of the scheme, including provision of stock, implements, furniture, and fittings, is estimated at £27,000—£16,000 for the educational portion and £11,000 for the institute.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

	Per standard.	
Yellow Pine Deals, 1st quality...	£55 0 0 to £57 0 0	
2nd	13 0 0 .. 45 0 0	
White Deals: First	22 0 0 .. 24 0 0	
Seconds	20 0 0 .. 22 0 0	
U.S. Yellow Planks, Deals, and Batts	10 10 0 .. 14 10 0	
Oak: Austrian Wainscot	£0 10 6 to £0 12 6	
Teak: Burmese, per load, 50ft.	28 0 0 .. 34 0 0	
Teak: Java, per load, 50ft.	24 0 0 .. 27 0 0	

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£8 10 0 to £8 12 6	
Wrought-Iron Girder Plates	8 10 0 .. 10 0 0	
Steel Girder Plates	8 17 6 .. 9 17 6	
Bar Iron, good Staffs	6 5 0 .. 8 10 0	
Do., Lowmoor, Flat, Round, or Square	22 0 0 .. 0 0 0	
Do., Welsh	5 15 0 .. 5 17 0	
Boiler Plates, Iron—		
South Staffs	8 0 0 .. 8 15 0	
Best Smedshill	9 0 0 .. 9 10 0	
Angles 10s., Tees 20s. per ton extra.		
Builders' Hoop Iron, for bonding, &c., £8 15s. to £9.		
Do. galvanized, £14 to £15 10s. per ton.		
Galvanized Corrugated Sheet Iron—		
No. 18 to 20. No. 23 to 24		
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0 .. £13 10 0	
Best ditto	13 10 0 .. 14 0 0	
Cast-Iron Columns	£5 17 6 to £8 10 0	
Cast-Iron Stanchions	6 17 6 .. 8 10 0	
Rolled-Iron Fencing Wire	8 5 0 .. 8 10 0	
Rolled-Steel Fencing Wire	7 5 0 .. 7 10 0	
Do., Galvanized	8 15 0 .. 9 5 0	
Cast-Iron Sash Weights	5 15 0 .. 6 0 0	
Cut Floor Brads	10 15 0 ..	
Corrugated Iron, 24 gauge	16 0 0 ..	
Galvanized Wire Strand, 7 ply.		
14 B.W.G.	14 5 0 ..	
B.B. Drawn Telegraph Wire, Galvanized—		
0 to 8	10 .. 13 .. B.W.G.	
£10 10s. £10 15s. £11 0s. £11 5s. £11 15s. per ton.		
Cast-Iron Socket Pipes—		
3in. diameter	£6 15 0 to £7 2 6	
4in. to 6in.	6 10 0 .. 6 12 6	
7in. to 24in. (all sizes)	6 17 6 .. 7 2 6	
[Coated with composition, 5s. 0d. per ton extra.		
turned and bored joints 5s. per ton extra.]		
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—		
Gas-Tubes	72½ p.c.	
Water-Tubes	66½ ..	
Steam-Tubes	55 ..	
Galvanized Gas-Tubes	60 ..	
Galvanized Water-Tubes	56½ ..	
Galvanized Steam-Tubes	50 ..	

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	£25 5 0 to	
Country	26 5 0 ..	
Lead Barrel Pipe, Town	26 5 0 ..	
Country	27 5 0 ..	
Lead Pipe, Tinned inside, Town	27 5 0 ..	
Country	28 5 0 ..	
Lead Pipe, Tinned inside and outside	29 15 0 ..	
Town	30 15 0 ..	
Country	30 15 0 ..	
Composition Gas-Pipe, Town	28 5 0 ..	
Country	29 5 0 ..	
Lead Soil-pipe (up to 4in.) Town	28 5 0 ..	
Country	29 5 0 ..	
[Over 4in. £1 per ton extra.]		
Lead, Common Brands	17 17 6 .. £18 12 6	
Lead Shot, in 25lb. bags	24 15 0 ..	
Copper Sheets, sheathing & rods	84 0 0 .. 84 10 0	
Copper, British Cake and Ingot	71 5 0 .. 72 5 0	
Tin, English Ingots	170 0 0 .. 180 0 0	
Do., Bars	171 0 0 .. 181 0 0	
Pig Lead, in lwt. Pigs (Town)	19 2 6 .. 20 2 6	
Sheet Lead, Town	24 15 0 ..	
Country	25 15 0 ..	
Genuine White Lead	31 10 0 ..	
Refined Red Lead	29 0 0 ..	
Sheet Zinc	69 0 0 ..	
Old Lead, against account	19 5 0 ..	
Tin	10 0 0 ..	
Cut nails (per cwt. basis, ordinary brand)	0 12 9 ..	
* For 5 cwt. lots and upwards.		

SLATES.

	in.	in.	£ s. d.	per 1,000 of
Blue Portmadoc	20	10	12 12 6	1,200 at r. stn
Blue Bangor	20	10	13 2 6	" "
First quality	20	12	13 17 6	" "
"	20	10	13 0 0	" "
"	20	12	13 15 0	" "
"	16	8	7 5 0	" "
Eureka unfading green	20	10	15 17 6	" "
"	20	12	18 7 6	" "
"	18	10	13 5 0	" "
"	16	8	10 5 0	" "
Permanent Green	20	10	11 12 6	" "
"	18	10	9 12 6	" "
"	16	8	6 12 6	" "

BRICKS.

(All prices net.)

First Hard Stocks	£1 15 0	per 1,000	alongside, in
Second Hard Stocks	1 11 0	"	" (river.
Mild Stocks	1 9 0	"	"
Picked Stocks for			" delivered
Facings	2 5 0	"	" at rly. stn.
Flettons	1 14 0	"	"
Pressed Wire Cuts	1 18 0	"	"
Red Wire Cuts	1 14 0	"	"
Best Fareham Red	3 12 0	"	"
Best Red Pressed			"
Ruabon Facing	5 0 0	"	"
Best Blue Pressed			"
Staffordshire	3 15 0	"	"
Ditto Bullnose	4 0 0	"	"
Best Stourbridge			"
Firebricks	4 0 0	"	"
2½in. Best Red Ac-			" (Net, delivered in
crington Plastic	4 10 6	"	" full truck loads
Facing Bricks			" in London.
3½s" Accrington Best Red Plastic Facing per 1,000			
Bricks	£2 10 0		
3½s" ditto Second Best Plastic ditto	2 2 6		
Ditto Ordinary Secondary Bricks	1 11 3		
Ditto Plastic Engineering Bricks	1 17 6		
Sewer Arch Brick not more than 3½ in			
thickest part	2 0 0		
3½s" Chimney Bricks fit for outside work	2 6 0		
3½s" ditto ditto through and through	2 0 0		
3½s" Beaded, Ovolo and Bevel Jambes; Octa-			
gons; 2½" and 3" radius Bullnoses; Stock			
patterns	3 7 6		
Accrington Air Bricks, 9" x 2 course deep, each	0 0 6		
Ditto ditto 9" x 1 course	0 0 3		
Accrington Camber Arches:—			
3 course deep, 4½" soffit, per foot opening	0 1 3		
4 ditto 4½" ditto ditto ditto	0 1 8		
5 ditto 4½" ditto ditto ditto	0 2 1		
6 ditto 4½" ditto ditto ditto	0 2 6		
3 ditto 9" ditto ditto ditto	0 2 1		
4 ditto 9" ditto ditto ditto	0 2 11		
5 ditto 9" ditto ditto ditto	0 3 6		
6 ditto 9" ditto ditto ditto	0 4 6		
Net free on rail, or free on boat at works.			

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

	White, Ivory, and	Best.	Second
Salt Glazed.		Buff, Cream, Other	
Best. Seconds. & Bronze. Colours.		Colours.	
Stretchers—			
£12 7 6 £10 17 6 £13 17 6 £17 17 6 £13 7 6			
Headers—			
11 17 6 10 7 6 13 7 6 17 7 6 11 17 6			
Quoins, Bullnose, and 4½in. Flats—			
15 17 6 14 17 6 17 17 6 21 7 6 15 17 6			
Double Stretchers—			
17 17 6 16 7 6 20 17 6 24 7 6 17 17 6			
Double Headers—			
14 17 6 13 7 6 17 17 6 21 7 6 14 17 6			
One side and two ends, square—			
18 17 6 17 17 6 21 7 6 26 7 6 18 17 6			
Two sides and one end, square—			
19 17 6 18 7 6 22 17 6 26 17 6 19 17 6			
Plays and Squints—			
17 7 6 15 7 6 21 7 6 24 7 6 17 7 6			
Plinth and Hollow Bricks, Stretchers and Headers—			
5d. each 4d. each 6d. each 6d. each 5d. each			
Double Bullnose, Round Ends, Bullnose Stops—			
5d. each 4d. each 6d. each 6d. each 5d. each			
Rounded Internal Angles—			
4d. each 3d. each 5d. each 5d. each 4d. each			

MOULDED BRICKS.

Stretchers and Headers—				
8d. each 8d. each 8d. each 8d. each 8d. each				
Internal and External Angles—				
1½ each 1½ each 1½ each 1½ each 1½ each				
Sill Bullnose, Stretchers, and Headers—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Majolica or Soft Glazed Stretchers and Headers	Per 1,000			
"	£23 17 6			
"	27 17 6			
Compass bricks, circular and arch bricks				
of single radius £6 per 1,000 over above				
list for their respective kinds and colours				
Camber arch bricks, any kind or colour,				
1s. 2d. each	by 2½in.			
Stretchers cut for Closers and Nicked Double				
Headers, £1 per 1,000 extra.				
* These prices are carriage paid in full truck loads				
to London Stations.	s. d.			
Thames Sand	7 6	per yard, delivered		
Pit Sand	7 0	"		
Thames Ballast	6 0	"		
Best Portland Cement	36 0	to 41 0	per ton,	
Ground Blue Lias Lime	21 6	per ton delivered		

Exclusive of charge for sacks.

Grey Stone Lime	13 6	to 14 0	delivered
Stourbridge Fireclay in sacks	27s. 0d.	per ton at	railway station.

STONE.*

Red Mansfield, in blocks	per foot cube	£0 2 4
Darley Dale, ditto	"	0 2 3
Red Cornhill, ditto	"	0 2 2
Closeburn Red Freestone, ditto	"	0 2 0
Ancaster, ditto	"	0 1 10
Greenshill, ditto	"	0 1 10
Beer, ditto	"	0 1 6
Chilmark, ditto (in truck at		
Nine Elms)	"	0 1 10½
Hard York, ditto	"	0 2 0
Do. do. 6in. sawn both sides,		
landings, random sizes	per foot sup.	0 2 8
Do. do. 6in. slab sawn two		
sides, random sizes	"	0 1 3

* All F.O.B. London.

Bath Stone, delivered on road	s. s. d.
waggons, Paddington Depot per foot cube	0 1 7½
Ditto, ditto, Nine Elms Depot	" 0 1 9½
Beer Stone, delivered on rail	
at Station Station	0 1 1
Ditto, delivered at Nine Elms	
Station	0 1 7½
Portland Stone, in random blocks of 20ft. average:—	
Delivered on road waggons	Brown White
at Paddington Depot,	White Bed. Base Bed.
Nine Elms Depot, or	Per foot cube.
Pimlico Wharf	£0 2 3 .. £0 2 4½

TILES.

	s. d.	Delvd. at
Plain red roofing tiles	42 0	per 1000 ry. sn.
Hip and Valley tiles	3 7	per doz.
Broseley tiles	50 0	per 1000
Ornamental tiles	52 6	"
Hip and Valley tiles	4 0	per doz.
Ruabon red, brown, or brindled		
ditto (Edwards)	57 6	per 1000
Ornamental ditto	60 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 0	"
Selected "Perfecta" roofing		
tiles: Plain tiles (Peake's)	46 0	per 1000
Ornamental ditto	48 6	"
Hip tiles	3 10½	per doz.
"Valley tiles	3 4½	"
"Rosemary" brand plain tiles	48 0	per 1000
Ornamental tiles	50 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 8	"
Staffordshire (Hanley) Reds or		
brindled tiles	42 6	per 1000
Hand-made sand-faced	45 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"
Hartshill "brand plain tiles,		
sand-faced	45 0	per 1000
Pressed	42 6	"
Ornamental ditto	47 6	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"

OILS.

Rapeseed, English pale, per ton	£28 15 0	to £29 5 0
Ditto, brown	26 15 0	to 27 5 0
Cottonseed, refined	29 0 0	to 30 0 0
Olive, Spanish	39 10 0	to 40 0 0
Seal, pale	21 0 0	to 21 10 0
Cocunut, Ceylon	46 0 0	to 46 10 0
Ditto, Ceylon	42 10 0	to 43 0 0
Ditto, Mauritius	42 10 0	to 43 0 0
Palm, Lagos	32 5 0	to 33 5 0
Ditto, Nut Kernel	35 0 0	to 35 10 0
Oleine	17 5 0	to 19 5 0
Sperm	30 0 0	to 31 0 0
Lubricating, U.S.	0 7 0	to 0 8 0
Petroleum, refined	0 0 6½	to 0 0 6
Tar, Stockholm	1 6 0	to 1 10 0
Ditto, Archangel	0 19 6	to 1 0 0
Linseed Oil	0 2 11	"
Baltic Oil	0 3 2	"
Turpentine	0 3 8	"
Putty (Genuine Linseed		
Oil	per cwt.	0 9 0 ..
Pure Linseed Oil		
"Storify" Brand	0 9 0 ..	

GLASS (IN CRATES).

English Sheet Glass: 15oz.	21oz.	26oz.	32oz.
Fourths	5½d.	6½d.	7d.
Thirds	5½d.	6½d.	7d.
Fluted Sheet	4½d.	5½d.	"
Hartley's English Rolled	4in.	3½in.	4in.
Plate	3½d.	3½d.	4d.
White. Tinted.			
Figured Rolled and Repoussé	4½d.	6d.	

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of	
churches	0 14 6
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Fine French Oil	1 1 0
Eggshell Flattening Varnish	0 18 9
White Copal Enamel	1 4 9
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 6

TRADE NOTES.

Boyle's latest patent "Air pump" ventilators have been applied to the Engineers' Institute, Foleshill-road, Coventry.

We are informed that the walls of the police-station at Worcester, which were frequently damp, have been completely cured by a rendering of Pudloed cement.

The Glasgow Corporation Art Gallery has just received the gift of an oil "Portrait of a Lady," by Sir John Watson Gordon, R.A.

The Isle of Ely Council have decided to appoint a land agent to be responsible for the proper cultivation of small holdings, and a committee has been instructed to frame a list of duties to be attached to the office.

OGILVIE & CO.

Telephone DALSTON 1385.
Many years connected with
the late firm of W. H.
LASCELLES & CO., of
Bunhill Row.

Mildmay Avenue, ISLINGTON, N.**EXPERTS in HIGH-CLASS JOINERY.****ALTERATIONS & DECORATIONS.**ESTIMATES
FREE.

FOR

Olivers'**Seasoned****Hardwoods,**

TO—

WM. OLIVER & SONS, Ltd.,**120, Bunhill Row, London, E.C.****TENDERS.**

. Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BARNOLDSDWICK.—For the erection of a pumping station, for the urban district council. Mr. J. W. Thompson, Gasworks, Barnoldswick, engineer:—
Mason:—Parker, T. W.
Joiners:—Robinson, L.
Slaters:—Nuttall, G. and T.
(All of Barnoldswick.)

BILSTON.—For executing works of street-paving between the Town Hall and Stow Heath-lane, for the Bilston Urban District Council:—
Durax Paving Co. (accepted) ... £7,675 0 0

BIRMINGHAM.—For rebuilding and alterations to premises after fire, Great Hampton-row, Birmingham, for Messrs. Boddill, Parker, and Co., Ltd.:—

Lowe, W., and Sons...	£3,695 0 0
Barnsley, J., and Sons...	3,555 0 0
Bishop, W. ...	3,177 0 0
Dallow, J., and Sons...	3,084 0 0
Whittall, W. J., and Sons*	2,983 0 0

* Accepted.

CAMELFORD.—For the erection of a sanitary convenience at Trebarwith Strand, for the district council:—
Clims, G. (accepted) ... £86 10 6

CLAPHAM, S.W.—For enlarging Wix's-lane school, Clapham, by 256 places, for the London County Council:—

Wylie & Lockhead, Bloomsbury	£6,792 15 1
Rice and Son, Stockwell-road	6,681 0 0
Downs, W., Ltd., Walworth	6,378 0 0
King, W., and Son, Vauxhall	
Bridge-road...	6,065 0 0
Moss, W., and Sons, Ltd.,	
Loughborough ...	6,015 4 11
Holliday and Greenwood, Ltd.,	
Batterssea ...	5,939 0 0
Blake, W. E., Ltd., Fulham	5,929 3 4
Bowyer, J. and Co., Upper	
Norwood ...	5,897 0 0
Triggs and Co., Clapham	5,770 0 0
Lole and Co., Chelsea (accepted)	5,364 0 0

(Architect's estimate, £5,598.)

COALVILLE.—For the erection and completion of business premises, comprising three shops with showrooms and workshops over, in Belvoir-road, Coalville, for the Coalville Working Men's Co-operative Society, Ltd. Mr. T. I. McCarthy, Central Chambers, Coalville, near Leicester, architect:—

Willeits and Sons, Staffs ...	£7,536 0 0
Kershaw, R., and Sons, Burton-	
on-Trent ...	7,195 0 0
Dennett and Ingle, Nottingham	7,165 0 0
For, E., Leicester ...	6,386 0 0
Oxton and Co., Coalville ...	6,999 0 0
Barker, T., and Son, Loughboro'	6,975 0 0
Maule, W., and Co., Nottingham	6,930 0 0
Chapman, J., Leicester ...	6,850 0 0
Long, T., and Son, Nottingham	6,775 0 0
Moss, W., and Son, Coalville ...	6,761 18 6
Cole, J., and Sons, Leicester ...	6,732 0 0
Corah, W., and Sons, Loughboro'	6,719 0 0
Perks, F., and Son, Ltd., Long	
Eaton ...	6,693 0 0
Griffin Bros., Hugglescote ...	6,625 0 0

(Architect's estimate, £6,900.)

* Accepted.

CROSSNESS, S.E. For building quarters for the superintendent of sludge vessels and the driver of the steam pinnace at the southern outfall works, for the London County Council:—

A.		B.	
Harris, W., North Woolwich, E.—			
£3,140 0 0	£171 0 0	£3,321 0 0	
Mills, W., and Sons, Blackheath, S.E.—			
2,240 0 0	177 0 0	2,427 0 0	
Bickerton, W., Catford, S.E.—			
2,162 0 0	221 0 0	2,383 0 0	
Pollock, W., Eitham, S.E.—			
2,157 0 0	151 0 0	2,308 0 0	
Dick, Kerr, and Co., Ltd., Cannon-street, E.C.—			
1,723 11 9	177 7 0	1,901 1 9	

A. Provisional additions. D. Total.

* Accepted, less provisional additions.

DOVER.—For the supply, delivery, and erection of a 1,000-kw. turbo-alternator set, for the corporation:—
British Thomson-Houston Co., Ltd., Rugby (accepted) ... £1,725 0 0

DENMARK HILL, S.E.—For the fitting up of the main kitchen and scullery at the Maudsley Hospital, for the London County Council:—

McDowall, Stevens, and Co.,		
Glasgow ...	£574	0 0
Richmond Gas Stove and Meter		
Co., Warrington ...	550	0 0
Summerscales, Ltd., Keighley ...	523	5 0
May, J. and F., London ...	513	0 0
Moorwoods, Ltd., Sheffield ...	498	10 0
Bradford, T. & Co., Manchester ...	485	0 0
Falkirk Iron Co., Ltd., Falkirk*	462	14 0

Accepted.

DURHAM.—For alterations to the workhouse laundry:—

White, J. W. ...	£2,685	0 0
Blackett, R., & Son, Darlington	2,395	0 0
Huntley, J., and Son ...	2,260	0 0
Stafford, R. and Son ...	2,242	0 0
Cooper, W. B. ...	2,209	0 0
Graddon, G., and Sons, Durham	2,201	10 0
Hall, W., Gateshead ...	2,142	0 0
Gibson, C. W., Durham*	2,052	10 0

* Accepted. Rest of Sunderland.

HAVERSTOCK HILL.—For the enlargement of the school on Haverstock Hill for physically defective children, for the London County Council:—

General Building Co., St.		
Martin's-lane ...	£3,539	0 0
Chessum, J., and Son, South-		
place ...	3,350	0 0
Neal, G., Kilburn ...	3,133	0 0
Monk, A., Lower Edmonton ...	3,046	0 0
Mc Cormick and Sons, Ltd.,		
Essex-road ...	2,982	11 2
Brand, Pettit, and Co., West		
Green-road ...	2,869	0 0
Lole and Co., Chelsea ...	2,807	13 0
Wall, C., Ltd., Chelsea ...	2,765	0 0
Roberts, A., and Co., Ltd., Earl's		
Court-road ...	2,765	0 0
Bovis, C. W., and Co., Ltd.,		
Upper Berkeley-street ...	2,760	0 0
Fairhead, A., and Son, Enfield*	2,681	0 0

(Architect's estimate, £2,875.)

* Accepted.

ILFORD.—For the erection of lavatories at the town-hall, for the urban district council:—
Sharpin, W. S., Bow (accepted) ... £462 0 0
(Lowest tender received.)

MAIDSTONE.—For providing a turbo-alternator of the Ljungstrom type at the electricity works, for the town council:—

Brush Electrical Engineering
Co., Loughborough (accepted) £6,887 0 0

NEWPORT, IRELAND.—For building a new parish church at Newport:—
Sisk, J., and Sons, Cork (accepted).

SOUTHAMPTON.—For the supply of new steam pumping plant at the waterworks, for the corporation:—
Potter, A. C., and Co., London ... £875 0 0
(Accepted.)

STAFFORD.—For the erection of the Staffordshire Farm Institute in Stone-road, Stafford, for the county education committee:—
Godwin, T., Hanley (accepted) ... £19,663 0 0
(Twelve tenders received.)

STOKE-ON-TRENT.—For reroofing part of the corporation baths, for the town council:—
Twigg, W., Stoke-on-Trent ... £490 0 0
(Accepted.)

ST. ALBANS.—For the second section of the sewerage scheme, for the corporation:—

Hickman, T., and Sons ...	£20,758	0 0
Podrette, T. W. ...	18,109	0 0
Miskin, C., and Sons, Ltd. ...	17,638	0 0
Bell, G., and Sons, Ltd. ...	16,853	0 0
Edwards and Co. ...	16,654	0 0
Henson, G., and Son (accepted)...	16,110	0 0

ST. GERMANS.—For the water-supply scheme, for the rural district council:—
Steer, Plymouth (accepted) ... £1,852 17 4

ST. PANCRAS, N.W.—For supply of 250,000 pairs of open-type arc lamp carbons, for the St. Pancras Borough Council:—

Electrical Supplies Co. ...	£2,830	0 0
London Commercial Electrical		
Stores ...	2,630	0 0
Geipel, W., and Co. ...	2,535	10 0
British Central Electric Co. ...	2,429	15 0
Engineering and Arc Lamp, Ltd.	2,185	10 0
Oliver Arc Lamp, Ltd. ...	2,185	10 0
Wells Electrical Co. ...	2,185	1 8
General Electric Co., Ltd.*	2,009	0 0

* Recommended for acceptance.

ST. PANCRAS.—For enlarging the playground at Holmes-road school, North St. Pancras, for the London County Council:—

General Building Co., St.		
Martin's-lane ...	£1,497	0 0
Pitcher, F., Marylebone-road ...	1,056	19 6
Monk, A., Lower Edmonton ...	925	0 0
Roome, E. A., and Co., Hackney	915	0 0
Bovis, Ltd., Portman-square ...	887	0 0
Godson, G., and Sons, Kilburn-		
lane ...	885	0 0
Blay, W. F., Ltd., Cannon-street	847	0 0
Triggs and Co., Clapham ...	837	0 0
Mc Cormick & Sons, Essex-road	830	0 0
Brand, Pettit, and Co., West		
Green-road ...	795	0 0
Lea, H. and E., Regent-street ...	793	0 0
Hall, P., Upper Clapton ...	791	0 0
Marchant, Hirst, and Co.,		
Highgate-road ...	776	0 0
Stevens and Sons, Crouch Hill*	748	0 0

(Architect's estimate, £835.)

* Accepted.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the Editor of the BUILDING NEWS, Eppingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

. Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits, on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

RECEIVED.—J. and H. P. and Co.—L. and Son, Ltd.—A. O. and Sons.—W. S.—D. and Co.—F. C. Co., Ltd.—J. S.—Van A. and Co.—C. B. and Son.—P. C. Co., Ltd.—H. M. and Co.—W. E. C.—W. L. E.—W., Ltd.—S. and Co., Ltd.—C. S. H.—U. D. C.

N. P. D.—Yes.

RIPLEY.—Thanks, no.

P. W.—Please send. 2. Yes.

A. H. L.—We have no room for replies to letters in other papers.

TRUSTEE.—We have given many in back vols. Perhaps one of the best and cheapest was a paragon built by the late E. W. Godwin, F.S.A., at Moor Green, Nottingham, of which very full illustrations appeared in our issue of March 6, 1874. That was built for £550 for Earl Cowper, and by day work. It would cost more now, of course.

H. T. D.—A "knowledge of building" does not help much to form an opinion. With the exception of your last query, with regard to which the builder may possibly have some reasonable claim, we think the architect is right. But all contingencies should have been provided for in the contract. If they were not, there will probably be litigation, as in not a few similar cases.

"BUILDING NEWS" DESIGNING CLUB.

SIXTH LIST OF SUBJECTS.

F.—A small social club for airmen and their friends. The premises are intended to be erected by the members on a plot of private land adjacent to aviation trial grounds situate within a few miles of a big town. No garage will be needed in connection with this club, because the Aviadrome Company has amply provided for the housing of motors close at hand. The club will occupy an elevated level site amply sufficient for the purposes of the building and its double forecourt terraces, whence aircraft displays can be viewed from a point of much advantage above the level of all buildings and tops of trees round about. The aspect for the main front is S.E.; but the lay-out of the apartments is intended to insure as good a prospect as possible from the chief rooms, and especially from the general assembly or luncheon room, 40ft. by 25ft., and from the ladies' drawing-room, 25ft. by 18ft., or of that area. There must be a good entrance-hall, about 18ft. by 12ft., and a lobby to the front entrance, with small card-room and pair of telephone private call places, with glazed fronts, near the entrance door. A billiard-room (for one full-sized table), having raised single row of wall seats on three sides. Provide a set of four bathrooms, and a general dressing-room, about 25ft. by 12ft., or of that area, with lockers at each end or on one side, three w.c.'s, and a men's lavatory en suite. Ladies to have one bathroom, good lavatory or retiring-room, and w.c. adjacent, wall isolated by ventilated lobby. Upstairs a club kitchen and offices, steward's living-room, and three double bedrooms, the accommodation being for a married couple with child or two, and two servants. The service entrance door and small house-yard to be on north side of building. Staircase will be private; but ladies' retiring department may be on an upper level if thought desirable. The upper terrace to be 6in. lower than club-floor level, and second terrace 4ft. lower than upper one, both terraces, 20ft. wide, will extend round three sides of the club, with steps conveniently placed for access in three places. No verandah round club desirable. A block plan to small scale will suffice to show the terraces. General drawings, drawn to scale of 8ft. to the inch, to be confined to the club building, which will be built of brick, with wood window-frames and metal casements glazed with plate glass. Roofs covered with tiles, and not treated as a flat for belvedere. A picturesque design on simple lines suitable for a club will gain preference. No tower is wanted. Show at least three elevations one section to eighth of an inch scale, and two plans to scale 16ft. to the inch. A view from the S.E. is required. Drawings (with coupon attached on back) due at BUILDING NEWS office not later than Wednesday in Easter week, April 7, 1915.

DRAWINGS RECEIVED:—"Ogee," "September Morn," "Joye," "Bournemouth Queen," "Penwith," "Pinto," "Perigrinus," "Toucanier," "Houghton Lea," "Sea Wolf," "Black Cat," "Tomtit," "Walbroke," "Nidesperandum," "Northpoint," "Sabrina," "Why."

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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- New Buildings, Trongate Improvement, Glasgow Cross ; Selected Design. View, plan, elevation, and section. Mr. John Keppie, F.R.I.B.A. (Messrs. Honeyman and Keppie), Architect.
- Church of St. Michael and All Angels, Beaconsfield, Bucks. Interior and exterior views, with plan. Mr. G. H. Fellowes Prynne, F.R.I.B.A., Architect.
- Wrought Iron Railings and Balustrade to External Stairs, Donibristle Mansion, Fife, N.B. Measured and drawn by Mr. J. Scott Lawson.
- Tuberculosis Dispensary, Sheffield. Plans, elevations, and section. Mr. F. E. Pearce Edwards, F.R.I.B.A., City Architect, Sheffield.

ARCHITECTS AND REMUNERATION.

"The Law as to the Remuneration of the Architect" was the taking title of a very interesting paper read by Mr. A. Montiflore Brice, Barrister, at a meeting of the Society of Architects last night, and which is fully reported in this issue. It is certainly a clear and lawyer-like statement of the present legal position of the question, with numerous references to cases decided and judgment given. In that way it was attractive and doubtless instructive to the audience generally; but the author did not emphasise any special points, or make any practical suggestions, with a view to preventing possible litigation in this difficult and often delicate matter. Perhaps he was wise in letting it alone, and contenting himself with an exposition of the principles of law affecting the remuneration of architects; for to go any further is to enter upon complex questions as to why the profession are not always, or wholly, in agreement.

To begin with, an architect is in the peculiar position of belonging to an art and profession which is not recognised as such by the law. He need pass no examination, nor obtain any degree; there is no legal standard of qualification. Any man can call himself an architect, and put up a big brass plate for the purpose of getting business. There is absolute freedom in this way, as there is, for instance, with accountants, who are in similar case. These have formed voluntary societies, which help the public to judge of their standing and qualifications, and architects have done likewise. It is, of course, quite true that a man who poses as an architect will not do much good without knowledge and skill, and until he has proved his capacity, and obtained some standing and recognition. All the same, the point is of practical importance, because, while the law, on the one hand, does not insist upon any qualification or license to practise this profession, so, on the other, it does nothing in the way of fixing the fees or remuneration legally chargeable. At the other end of the scale he may take a solicitor, who is compelled to pass examinations and prove his qualification, besides having to pay heavily on his apprenticeship and for his annual certificate. But in return for all this he is allowed to charge certain costs upon a fixed scale, which are payable to him as an officer of the Court, by which he is completely controlled.

While, therefore, architects enjoy the fullest freedom to practise their profession, they are, in the eye of the law, much the same as other skilled agents employed for business purposes with regard to their remuneration and responsibility. They are

subject to no statute; but against this they have no definite and enforceable scale of charges. It therefore comes to this: that their fees for work done must be claimed, either upon a contract or under a custom. There can be no doubt as to the advisability of always having an express contract as to remuneration, by which we mean some written agreement or note signed by the client, and plainly specifying the fees and charges. Where there is no such positive and provable arrangement, the architect has to rely upon what is loosely called "custom," and which means the scale of payment usual in the profession. But this custom, in the eye of the law, is a technical and troublesome matter. Indeed, the best way to explain the position of the parties where there is no express contract is that they ask the Courts to presume an implied contract from the nature of the employment. This, however, begins by supposing that the client, as well as the architect, is aware of the usages of the profession, and of the fees that are customary. Yet, if the client, as often happens, knows nothing whatever about it, and is building a house, or, in some other way, engaging an architect for the first time, this implication, upon which alone a contract can be legally inferred, at once falls to the ground. Then the architect is left to claim a reasonable remuneration for his work done and services rendered, and so he may be at the mercy of a judge or a jury in assessing what, in legal phrase, is called the "quantum meruit," or, in English, what it is worth.

In trying to get away from this necessity of fixing charges by the sole guide of what is thought to be reasonable, there have been many unsuccessful attempts made to establish a custom which shall be binding as to architects in the same way, for example, as has been done with regard to brokers' commissions on the Stock Exchange. So far, no legal and binding custom has been established as to architects' remuneration. The law takes strong views as to what constitutes such a custom. It must, to be valid, be general, and it must be reasonable. With its usual, and, perhaps, unconscious, humour, the law also holds that, though a judge and jury sit together to decide the matter, yet while it is the province of the jury to say what amount would be reasonable in the case, it is for the Judge to decide whether or not the custom set up is, in itself, reasonable. So the Bench always has the last word, and even a verdict may not give judgment. If, however, it can be shown in evidence that the client knew of the customary charge; or if, for example, he was aware of Rydes scale, or that of the

Royal Institute, the Court may infer from the fact that he agreed to pay these charges, and so base them upon a contract implied between the parties. But this is quite a different thing from a legal and accepted custom, always binding upon, and in favour of, the profession, and which, when alleged, can easily be proved. So it comes back to this, that architects should be careful to keep clear of judge, and juries, and arbitrators, and always have a written contract, or clause, or note signed by the client, agreeing definitely as to their remuneration.

We are aware that many members of the profession do not wish to be bothered about these things. They are architects, and, therefore, artists, and, very often, the better they are, the more subject do they become to their artistic temperament. There is thus, in numerous cases, a tendency to let the question of fees, etc., settle itself, and to rely upon such vague phrases as "usual charges," and the "practice of the profession." So there is a conversation with the client, or, what is worse, an "understanding," which means something that no two people understand in the same way, and the matter drifts into an amazing litigation, which a few plain words in writing would have entirely avoided.

Where the architect has to deal with the various probable and possible problems that may and do arise under a building contract, he often has a very lively time. Of course, his principal in the matter is the building owner—i.e., the client who is to pay. But, in practice, the carrying out of the contract often resolves itself into a three-cornered affair: sometimes even a triangular duel. It would be well if the relations of architect and owner could always be kept clear of those with the builder who is doing the work for the owner under the orders of the architect as his agent. This, however, is not always easily done, and, in actual business, the matter is too apt to get rather mixed up. For example, it is quite usual for the architect's extra charges as to measuring extra work, etc., to be added to the builder's account, or to his certificate for the purpose of his obtaining payment from the owner as the employer of them both. When the money is so paid, of course, all is well. But if the employer refuses, then the architect will find he has no claim upon the builder, and so may suffer loss. The ways of those who work in the business of building always seem wonderful to lawyers, and indeed, even to other traders. It is doubtless only a useless counsel of perfection to point out that it would be better and safer for all parties concerned if they each kept to their own position, and did not act the

one for the other in carrying out the contract. The confusion that is caused when there is some fall-out between those engaged upon the job generally arises from this crossing of each other's provinces. No doubt the complicated methods in practice usually come out straight in the end, where all work with good will harmoniously together; but from the beginning to the end of the matter there is always much risk of a lawsuit or an arbitration, which, we think, a simpler system would altogether avoid.

Architects should also remember that where a contract is made to complete an entire work for a stated sum, the right to payment does not arise until this completion is achieved. Illness or death may happen to prevent them from finishing the work; and this contingency needs to be provided for in the agreement as to his remuneration. There are also cases in which architects are employed to prepare plans for some ambitious building which the owner finds himself financially unable to erect. In such a matter, fair charges can be legally recovered for the work that he has done, although, through no fault of his, it may not be actually used. In regard to plans and drawings upon which an architect has a lien for his charges in their regard, it is well to observe that the enforcement of this lien by retaining the plans does not prevent his suing for what is owing, so long as he gives his employer access to the same. Nor does the bringing of an action in any way forego his right of lien, which remains until the debt is paid.

Although, in the absence of an express contract, or an implied contract based on custom, an architect may only be able to recover reasonable charges. Yet the judge or jury, in deciding what would be reasonable under the circumstances, can hear evidence of his exceptional skill, and of his standing in the profession, and so allow them at a high rate. But, in reference to charges outside the building contract, architects must get over the habit of seeking to reckon them upon a percentage on the amount expended. Thus, in settling the amounts between owner and builder, although a fair fee would be recoverable, a commission on the total of the account could not be allowed. Throughout the whole of Mr. Brice's interesting paper it is obvious that the Courts have been fair and reasonable in regard to the architect's remuneration, and in reference to his professional position. But the cases quoted themselves mostly prove that, by the exercise of a little business capacity at the beginning, the aid of the Courts need not have been sought. It is true that the artistic temperament does not care about legal propositions, and however good a man of business in his own line an architect may be, he usually thinks he can do without lawyers. Yet these contracts, with their clauses as to architect's duties, powers, and fees, are ticklish things to deal with. The common idea too often is that a lawyer is a man to go to when litigation has begun—i.e., a man to do one's fighting. But this is a very fallacious and unsatisfactory view. Just as wise people nowadays consult a doctor to learn how they may keep well and fit, and do not wait until they are really down with a disease, so commonsense seems to teach us that the best use of a lawyer is to advise as how to do business so as to keep out of disputes and difficulties, and thus avoid litigation entirely. In this sense it might be well if, before entering upon a contract, every architect spoke to his legal friend, and asked him to see that the clause as to remuneration was clear and comprehensive.

A new church is about to be built on Tara Hill, Gorey. The contractor is Mr. B. W. Webster, of Gorey.

THE LAW AS TO THE REMUNERATION OF THE ARCHITECT.*

By A. MONTEFIORE BRICE, Barrister-at-Law.

Just as the profession, as opposed to the practice of the architect, is not regularised by law, and its pursuit is open to any person who may choose to take upon himself the risk of holding out that he possesses the knowledge and skill required for the work he undertakes to do, so there is no legal or statutory code of charges for such work as he has undertaken and done. The profession and remuneration of the architect do not depend on statute as, e.g., do those of the solicitor; but any person may hold himself out as able and willing to undertake the work of an architect, and any such person may sue for and recover some, but not necessarily a definite, remuneration for having done that work. Should the contract between the employer and the architect, or some subsequent contract, whether written or verbal, specify in exact terms, or by reference, the charges which the employer shall pay and the architect accept, then there is an express contract as to the amount the architect may properly charge; but if there be no express contract, whether verbal or written, as to such charges, then it will be held, as no professional man can intend, or can be required, to give his skill and care for nothing, that there was an implied contract between the employer and the architect that the one should give and the other receive a reasonable remuneration for services rendered. This is the legal doctrine affecting the remuneration of the architect, unless a specific contract has been entered into between the parties as to what that remuneration shall be. In the absence of such a contract, then the remuneration of the architect must be such an amount as in all the circumstances seems fair and reasonable.

NO "CUSTOM."

Architects have endeavoured on many occasions to show that the scale of charges recognised by the profession has in course of time and experience amounted to a "custom"; but no scale of charges, however widely known within, and however generally adopted by the profession, can, if unreasonable, govern a case in which the other contracting party did not know of such custom, or, if knowing it, did not expressly or impliedly consent to it. Formerly, the practice of the profession in this respect received perhaps greater attention than it has obtained in more recent years, and, in 1869, Lord Romilly, in "Attorney General v. Drapers Co." (L.R., 9 Eq. 69), said that "the charges of brokers on the transfer of stocks and shares are paid by a commission, and if a similar practice prevails with respect to surveyors' charges I shall not disturb it. It prevents disputes as to amount, and the charges fixed by the scale do not seem too high." The modern and still prevailing view was put clearly enough by Lord Coleridge, L.C.J., in "Burr v. Ridout" (1893, *Times*, February 22nd; *Builder*, February 25th, 1893, p. 157), and followed by the same judge in "Farthing v. Tomkins" (1893), 9 T.L.R., 566; and in "Gwyther v. Gaze" (*Times*, February 8th, 1875), by Quain J., who held that an alleged customary charge of 2½ per cent. on the lowest tender, when no tender had been accepted, was unreasonable, and left it to the jury to say what sum would be reasonable. While it is within the province of the jury to assess the amount which would be reasonable, it is the function of the judge to decide as to whether an alleged custom is reasonable. The Courts have always taken upon themselves to consider whether a custom is or is not within the bounds of reason, and, if the custom is unreasonable, the Courts have said that they will not recognise it as binding on people who do not know of it and have not consented to act upon it. "Perry v. Barnett" (1885), 15 Q.B.D., 388, per Brett, M.R., at p. 393. And in "Debenham v. King's College, Cambridge" (1884), 1 T.L.R., 170, it was held by Wills, J., that there is no custom between surveyors

and their clients by which the former can base their account on Ryde's Scale of Fees for Surveyors' Charges; and a surveyor, in the absence of a special agreement, is only entitled to charge a fair and reasonable sum for his services.

NO DIFFICULTY IF REMUNERATION IS PROVIDED FOR IN CONTRACT.

If, however, there is contained in the contract (as there should always be) a clause dealing expressly with the remuneration of the architect, no difficulty need arise; neither should there be any difficulty when the amount and scale of the charges is agreed by reference to be in conformity with the scale of the Royal Institute of British Architects, or with Ryde's Scale, or some other method of computation known to or accepted by the parties to the contract. Where such a scale is known by the employer to exist and to be used, there will be a presumption (which may, of course, be rebutted) that the employment is upon the terms of such scale or custom, and in "Buckland v. Pawson" (1890), 6 T.L.R., 421, Day, J., said the question was whether the plaintiffs were or were not employed upon what was known as Ryde's Scale. He did not think the evidence in the case was sufficient to establish a custom, but there was abundant evidence that Ryde's Scale was generally known and was the ordinary mode of remuneration of surveyors. The plaintiff was employed by defendant, who, it was sworn, had employed others, and had himself been employed on Ryde's Scale. There was overwhelming evidence that the persons whom the defendants entrusted with the duty of employing a surveyor were well acquainted with the custom, and it must be assumed that the plaintiff was employed on Ryde's Scale. Similarly, a custom, however unreasonable, is binding on the parties if the contract is entered into by them upon the terms of such custom. Thus in "Blackburn v. Mason" (1893), 9 T.L.R., 286 C.A., it was held by the Court, per Lord Esher, M.R., that a party could only be bound by an unreasonable custom when at the time of dealing on the market the custom was made known to him and he had agreed to be bound by it; and see "Cooke v. Eshelby" (12 App. Cas. 271). There should be no difficulty as to the scale of remuneration if the architect agrees with his employer that his payment shall be made upon the basis of the schedule of charges as drawn up by the Royal Institute of British Architects, supplemented, where necessary, by Ryde's Scale. The charges which an architect in the course of, and arising out of, his profession may be called upon to make are many and various, and may now be considered under two heads—namely, charges arising out of the building contract, and charges outside the building contract.

CHARGES ARISING OUT OF THE BUILDING CONTRACT.

According to the schedule of the Royal Institute of British Architects and the practice of the profession, the usual remuneration of the architect is a five per cent. commission upon the total cost of the works executed under his directions, and this commission is payment for the necessary preliminary conferences and sketches, approximate estimate when required, the necessary general and detailed drawings and specifications, one set of tracings, duplicate specification, general superintendence of works, and examining and passing the accounts, exclusive of measuring and making out extras and omissions. The commission does not include payment for services rendered in connection with negotiations relating to the site or premises, or in supplying drawings to ground or other landlords, or in surveying the site or premises and taking levels, making surveys and plans of buildings to be altered, making arrangements in respect of party-walls and rights of light, or for drawings for, and correspondence with, local and other authorities, or for services consequent on the failure of builders to carry out the works, or for services in connection with litigation or arbitration, or in the measurement and

* Read on March 11 before the Society of Architects.

valuation of extras and omissions. But the practice of the profession shows that such commission of five per cent. is inadequate in the case of works of less cost than £1,000, or of highly-decorated buildings, or of alterations and additions, and in such cases the architect's fee is one which is reasonable in the special circumstances of each case. If the architect sends in an estimate or submits drawings for approval and they are not accepted, or approved, or used, no claim for remuneration in respect of the estimate or drawings, in the absence of an agreement to the contrary, will arise. Thus in "Moffat v. Laurie" (1855), 15 C.B., 583, the architect made surveys and plans for the employer without charge upon the understanding that he should be appointed the architect upon the land being sold for building purposes; but the employer died and his executors put it out of their power to sell the land for building purposes, and it was held that he could recover nothing, inasmuch as the event on the happening of which alone the plaintiff was to be entitled to remuneration for his services—namely, the disposal of the land for building purposes—had not happened. In "Moffat v. Dickson" (1853), 13 C.B., 543, the architect agreed to examine site proposed for a lunatic asylum, and to prepare preliminary probationary drawings for the approval of the visitors' committee, and subsequently prepare the whole of the working drawings, estimates, and specifications for the asylum, and to accept £437 10s. for those services. The probationary drawings were not approved, and upon that ground it was held that the architect could not recover. With regard to competition drawings everything turns on the precise terms of the invitation to compete; and in the absence of any undertaking to pay, the drawings must be regarded in the light of estimates, for which no charge can be made. Thus in "Ward v. Lowndes" (1859), 28 L.J., Q.B., 265, the architect sent in drawings for a covered market-house upon the invitation of the advertisement of the Commissioners, who also offered a premium of £20 for the best design in the event of the maker of such design not being selected as the architect. The plaintiff sued on the ground that his was the best design, but he failed in his action. But if the plans or estimates or preliminary work is used at all, even if the architect is not engaged to superintend the work, he can recover on a *quantum meruit*. Thus in "Lindley v. Wilson" (1880), 8 Ct. of Sess. Cas. 4th Ser. (Rettie) 289, an architect prepared detailed plans, and though the buildings were not proceeded with, the employer used the plans to his advantage in dealing with a purchaser of the ground. The employer denied liability on the ground that the plans had been furnished upon the footing of there being a competition; but it was held that assuming the fact to be as stated by the defence, it still lay in the employer to prove that the employment was gratuitous, and this he had failed to do. The Court held that the architect was entitled to reasonable remuneration, and Lord Shand added (p. 293): "If I had been of opinion that the case was one of a competition of plans between the two architects, and the defendant had afterwards thought fit not to build at all, I should have had great difficulty in holding that he would have been entitled to say to the competitors, 'You shall be paid nothing for the plans and labour you have bestowed on me.' My impression is that each of them would have been entitled to receive a *quantum meruit*." But the defence of competition was negatived by the Court.

CHARGES OUTSIDE THE BUILDING CONTRACT.

The architect may be properly called upon to render a variety of services in no way necessarily connected with the usual building contract under which he plans, designs, and supervises the erection or alteration of a building. He may, for instance, be called upon to survey ground suitable for building, or survey buildings, or measure up completed work, or value houses, lands, or work, or draft bills of quantities, and act as an arbitrator or as a witness in court or at an

arbitration. In exercising any of the foregoing functions he is, in the absence of an express or implied agreement for a fixed or ascertainable sum, only entitled to charge what is reasonable. He may, if he choose, charge upon a scale known to and approved by his profession; but, if it be unreasonable, he cannot impose it upon a client who is ignorant of it, or who, upon the making of the contract, could not rightly be supposed to contemplate such a method of computing payment. See "Debenham v. King's College, Cambridge" (supra). "Brocklebank v. L. and Y. Ry." (1887), 3 T.L.R., "Burr v. Ridout" (supra). "Gwyther v. Gaze" (supra). "Perry v. Barnett" (supra). But if the employer could reasonably be supposed to know of the scale and of the custom of charging in accordance with it, so that an implied agreement might be inferred, then the architect could sustain an action for payment based upon such a scale (see "Buckland v. Pawson" (1890), 6 T.L.R., 421). In examining and settling accounts between a builder and a building owner, the architect can recover a reasonable fee for his time and trouble, but the Court will not (except, perhaps, when the amount of the account is small) permit a charge based upon a percentage of the total amount of the account ("Upsdell v. Stewart" (1794), 2 Peake, N.P., 255). Nor, in qualifying for giving evidence or for actually giving evidence, can an architect base his fees upon the value of the subject matter in dispute. Coleridge, L.C.J., in "Drew v. Josolyne" (1888), 4 T.L.R., 717, declared that he had never sanctioned, and never would sanction, the supposed rule that surveyors should be paid for their evidence by a percentage on the sum in dispute, rather than by a computation of the work they had done. In that case the surveyor employed as an expert witness had charged £136 for qualifying, and this amount had been reached by calculating a percentage on the work measured. The Master had struck out £106, and allowed the witness £30 for qualifying himself, and £3 3s. a day for attendance during the arbitration, and, on appeal, the Master's decision was upheld. In measuring up deviations, etc., and in the absence of an agreement to the contrary, the architect is entitled by the custom of his profession to charge a sum over and above his commission of five per cent. (if such payment by commission is agreed) for doing such work. In practice the amount is added to the builder's account—or, rather, to the certificate given by the architect to the builder—and this has the effect of putting the architect in the unsatisfactory position of inspecting his own work and certifying for it. But though the charge is added to the builder's account and presented by him to the employer for payment, yet this practice does not entitle the architect to sue the builder for the amount in the event of the employer refusing or neglecting to pay the sum in question. For although as a method of practice the payment has been included in the builder's demand, yet in essence the charge is one for which the employer is responsible, for the work of measuring up deviations and extras by the architect or the surveyor is a work which is obviously for the protection and benefit of the employer, and serves as a check upon the builder. It is, therefore, useless for the architect to sue the builder, except for money had and received for the use of the architect. "Beattie v. Gilroy" (1882) 10 Ct. of Sess. Cas. 4th Ser. 226.

THE CHARGES OF THE ARCHITECT ARE PAID VARIOUSLY,

but generally according to agreement and by periodical instalments. It is a legal principle that if a contract is entered into to carry out an entire work for a complete sum, then the right to that payment does not arise until the whole work is itself completed. If an architect enters into such a contract as this, he runs a serious risk of getting nothing at all. For if he is unable by illness or other cause to finish the work he has undertaken to do, he is by that contract entitled to nothing. If there is no such contract, then the architect may recover pay-

ment as the work progresses, for unless a contrary agreement can be shown, a man is entitled to be paid as soon as he has done any work agreed to be paid for, just as, in the absence of an agreement to the contrary, a vendor is in law entitled to receive the cash of his purchaser in simultaneous exchange for his goods. Loose language in agreements has on many occasions deprived the servant of his hire. Thus, where a person working for a committee agreed to be paid by the committee on the terms of its resolution that "any service to be rendered by W. shall be taken into consideration, and such remuneration be made as shall be deemed right," it was held, when he brought an action for reasonable remuneration, that the committee was the sole judge as to whether any, and, if so, what remuneration should be payable, and that the plaintiff, in consequence, should be non-suited ("Taylor v. Brewer" (1813), M. and S., 290). But if the employer has agreed to pay some remuneration, then the architect is entitled to be paid one that is reasonable ("Bryant v. Flight" (1839), 5, M. and W., 114). The intervention of a condition will determine the time of or the right to payment; as in "Moffat v. Dickson" (supra), where payment depended on approval which was not given, or as in "Moffat v. Laurie" (supra), where payment depended on the land being sold by the employer for building purposes, and the land was not so sold. Should the employer who has entered into a contract with the architect for certain work refuse or neglect to proceed with such contract, the architect will then be able to sue for damages for the employer's breach of his contract, and the measure of his damages will be all the sums earned but not paid before the breach, and all the future profits which it is reasonable to suppose he has lost because of the breach. In "Farthing v. Tomkins" (1893), 9 T.L.R., 566, an architect prepared plans for a hotel, but, owing to the financial incapacity of the employer, the proposed building was abandoned, and the architect, failing to obtain his fees, brought an action for them, and it was held that he was entitled to recover fair charges for the work which had been done. In "Prickett v. Badger" (1856), (1 C.B.N.S., 296, and see "Spratt v. Dornford," *Times*, December 1, 1862, it was held that when an agent has done that for which he was employed, but the principal refuses or neglects to avail himself of the agent's work, the agent is entitled to sue for a reasonable remuneration for his work and labour, and in such a case a contract to pay what is reasonable is implied by the law; it is not a question for the jury.

NOT ENTITLED TO PAYMENT IF SERVICES ARE RENDERED UNSKILFULLY.

The architect is not entitled to payment when his services have been unskilfully performed, or though skilfully performed, have proved to be of no use for the purpose for which he has been employed. Lord Ellenborough, C.J., laid down the legal principle in "Farnsworth v. Garrard" (1807), 1 Camp., N.P., 37, where he said that "the plaintiff is to receive what he deserves." If there has been no beneficial service there shall be no pay; but if some benefit has been derived, though not to the extent expected, this shall go to the amount of the plaintiff's demand, leaving the defendant to his action for negligence. The claim shall be co-extensive with the benefit." And Bayley, J., in "Duncan v. Blundell" (3 Stark 6), said: "When a person is employed in a work of skill the employer buys both his labour and his judgment; he ought not to undertake the work if it cannot succeed, and he should know whether it will or not; of course, it is otherwise if the party employing him choose to supersede the workman's judgment by using his own." [See also "Hill v. Featherstonehaugh" (1831), 7, Bing, 569, per Tindal, C.J., at p. 571, and Alderson, B., at p. 573; "Bracey v. Carter" (1840), 12, A and E., 373; and "Hunt v. Wimbledon Local Board" (1878), 4 C.P.D., 48, Bramwell, B., at pp. 53 and 54.] Where a professional man makes an estimate, which turns out to be incorrect to

a considerable amount through his omitting to examine the ground for the foundations of the work, he is not entitled to recover anything for his plans, specifications, or estimates made for that work, for he is negligent either in not himself making the examination or in trusting to the inaccurate information of others. Whether he has used due diligence or not is a question for the jury, and if he went on the statements of others that is no excuse, as it is his duty to ascertain what are the facts or to report to his employer that he only goes on the information of others, or that the facts have not been ascertained (*"Money Penny v. Hartland"* (1824) 1 C. and P., 352, and see *"Whitty v. Lord Dillon"* 2 F. and F., 67, and *"Nelson v. Spooner"*, 2 F. and F., 613). On the other hand, where the question of what is a reasonable sum to pay an architect on work done—i.e., in a case where there is no express contract or the contract has been abandoned and he is suing on a *quantum meruit*—is under consideration evidence may be given that an architect is a man of exceptional professional skill, qualification, or experience, and if this is proved the reasonable fees should be higher than in the case of a person with less or inferior qualification, for it follows that if the employer has chosen a man known for his special degree of skill it is a fair presumption that he chose him for that reason, and that there was an implied undertaking to pay fees in some true proportion to the services expected. *Moule, J., in "Bird v. M'Gahey"* (1849), 2 C. and K. (N.P.), 707, held that in an action for payment on a *quantum meruit*, where the plaintiff sued for a larger fee than had been tendered to him, evidence of skill, in order to show the reasonableness of the larger claim, was admissible.

The fact that an architect exercises his lien over his plans and detains them does not disentitle him to sue for the payment for the same, provided that he has given his employer reasonable facilities for inspecting and approving them. Nor is he unable to sue for and recover a proper price, even though he detained the plans when asking for a larger price. He is always entitled to recover for work, labour, and materials, on proof of the performance of the work and of the employer's having had a reasonable opportunity of inspection, for his contract is to perform the work satisfactorily and to give the employer a reasonable opportunity of inspecting and ascertaining its correctness. As soon as he has fulfilled this contract and can prove it he may maintain successfully an action for the debt without foregoing his lien (*"Hughes v. Lenny"* (1839), 5 M. and W., 183, 192, 193).

BUILDING TRADE CONDITIONS IN THE SOUTH OF ENGLAND.

Mr. E. F. Harmer, F.S.I., in a paper prepared for the Southampton Chamber of Commerce, observes:—

It seems to me that if we, as a nation, are going to do the very utmost for ourselves during the remainder of the war, it would be as well to take a general survey of the conditions likely to prevail during that time. At present there are many signs that persons who would build under normal conditions are waiting until the cessation of hostilities before commencing. This, in many cases, is a mistake, as there are many evidences that the cost of materials will increase considerably after the war. In January, 1915, the only building materials that have shown any considerable increase in cost are timber, glass, and lead. At the moment of writing these increases are as follows: Timber, 25 per cent.; glass, 120 per cent.; lead, small and uncertain. The reasons for the increase in the cost of timber are the great demand by the War Office and slightly decreased shipments owing to the war. In the case of glass, our chief supplies came from Belgium and Germany, and this source is for the present cut off. Lead need not trouble us at all, as there are several excellent substitutes. Now let us see how these variations affect the ordinary contracts. Take, first, a dwelling-house costing £1,500. In this house there

are 1,800cu.ft. of timber; an increase of 6d. per foot amounts to £45, and 677sq.ft. of glass at an increase of 6d. amounts to about £17, making a total of £62 on the cost, or about 4 per cent. increase. We now take a shop and stores in the centre of the town, costing £5,000; it actually requires 3,900cu.ft. of timber, amounting to an increase of £98, and 1,339sq.ft. of glass, with an increase of £30. Total, £128, or 2½ per cent. on the whole. Our next example is a large factory, where as little timber as possible has been used, costing about £50,000. On 6,015cu.ft. of timber the extra would be £150, and on 57,000sq.ft. of glass £724. Total, £874, or not quite one-sixth of 1 per cent.—this low additional cost being due to the small amount of timber used, and as a result the building is practically fireproof. Estimates for small residences since the war show an increase of slightly under 9 per cent., and it is necessary to relax restrictions as to time of completion by granting an equitable allowance for delays beyond the control of the contractor. Let us now examine the conditions likely to prevail after the war. In the first place, owing to the terrible destruction of property in Poland, Belgium, and France, immense quantities of iron, steel, cement, bricks, timber, and glass will be required to rebuild not only houses and business premises, but—most important of all—factories, because until trade is re-established in these countries there will be a dreadful state of unemployment and want amongst the working classes. Now this extraordinary demand is bound to affect prices and cause shortage of supplies, and in order that we, as a nation, should reap the greatest benefit, and also give the greatest assistance to our allies, we must be first prepared to deal with this demand, and consequently our manufacturers should be encouraged to extend and rebuild or reorganise their factories before that demand becomes acute, or the consequence will be that Germany will reap benefit by her wrongdoing, because when peace is declared cost will still be the great factor in business, and not sentiment. Those persons who think that they will build more cheaply after the war will be liable to a sad awakening.

THE LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council the Finance Committee reported the receipt of a letter from the Treasury expressing the opinion that "it is desirable that capital expenditure by local authorities in the United Kingdom should be restricted within the narrowest possible limits at the present time." The letter stated that their Lordships had intimated to several local authorities, in reply to applications for their approval of loans, that that approval would not be forthcoming, in the absence of special considerations, for fresh borrowings for the purpose of new expenditure. In the circumstances, the Council was asked by the Treasury to reconsider applications recently made for approval of certain loans to the Battersea, Hammersmith, Lambeth, and Wandsworth Borough Councils, and the North Surrey District School managers.

The Finance Committee pointed out, in their report, that they are withholding the submission of recommendations as to the sanction of borrowings by Metropolitan borough councils, have abstained from making any further advances of money to local authorities, and have given instructions for the postponement of the completion of any loans which have already been agreed to.

The Highways Committee submitted an estimate of £11,800 for the provision of cables at the Greenwich generating-station of the tramways undertaking, in connection with the provision of a further reserve supply of power of about 4,000kw. from an outside source, in order that additional cars may be run.

The Building Acts Committee reported that in July, 1910, the Council appointed Mr. Alfred Conder, who had previously been district surveyor for Woolwich, to be district surveyor for the enlarged district of

Greenwich and Woolwich, subject to the condition, among others, that he would, if required, retire upon reaching the age of seventy years. Mr. Conder will attain this age on April 8, and they recommended that he be retired from that date.

The Establishment Committee regretted to report that Mr. P. N. Ginhams, an assistant architect, in receipt of a salary of £600 a year, had been certified by the Council's medical examiner to be permanently unfit for further service. Mr. Ginhams, who is forty-nine years of age, entered the service of the Council in July, 1902, and a retiring allowance of about £178 a year would be payable to him out of the superannuation and provident fund.

NEW POWERS FOR LIVERPOOL CORPORATION.

The Liverpool Corporation Bill, empowering the corporation to acquire further lands for street improvements and the erection of public buildings, to extend the powers of the corporation in respect of the leasing of corporate lands, and other purposes, came before the Local Legislation Committee of the House of Commons on Friday. Sir W. Howell Davies presided. The main clauses of the Bill relate to land purchased and corporate leases. Clause 4 provides for the acquisition of land for street improvements at the junction of Mount Pleasant and Brownlow-hill, at Sinclair-road, Mossley-hill, and between Cambridge-street and Egypt-street. Clause 5 provides for the purchase of the area between Dale-street, Manchester-street, and the Old Haymarket as a site for public buildings. Under clause 11 the corporation obtain power to lease corporation land for any term not exceeding ninety-nine years, instead of being limited to seventy-five years. Clause 13 stipulates that revenue from fines on renewals of leases which may be invested by the corporation on mortgage of the leasehold interest of any lessee of corporate land shall be expended on the improvement of the premises. Clause 16 gives the corporation power to borrow for the purchase of the lands to be acquired under the Bill £250,000, repayable in sixty years.

The only petition against the Bill related to the acquiring of property owned by Miss Graham, at Mossley-hill. The corporation have been engaged for some time constructing a road seven miles long and 120ft. wide round Liverpool, called Queen's-drive. The whole of the road has been constructed with the exception of one small piece, and the work has been carried out with this exception by agreement with the various proprietors whose land has been taken. Miss Graham, who is the owner of Moss Lea, complains that her property would be materially damaged by the corporation acquiring a portion of her back premises for the construction of the road, and objected to the point being decided by arbitration. Mr. J. A. Brodie, city engineer, stated that about twenty miles of wide roads had been constructed in Liverpool within recent years. He considered that the completion of Queen's-drive would benefit Miss Graham's property. The committee decided, however, that the property must be struck out of the schedule, so that Miss Graham's case will have to be dealt with under the Lands Clauses Act. The various clauses of the Act were not contested, and the Bill was reported to the House.

The new buildings of the Department of Household and Social Science of King's College for Women will be brought into occupation in October, when the present rooms in Kensington-square will be closed. The buildings, which have been erected to the design of Mr. H. Percy Adams and Mr. Charles Holden, stand on two and a half acres of ground on the west side of Campden Hill-road, Notting Hill Gate. They surround a quadrangle, and are faced with red brick with white stone dressings. On the ground floor and first floor there are twenty-six rooms and laboratories, which face either west or south. The hostel, which has been named Queen Mary's Hostel for Women Students, contains sixty-three bed-sitting-rooms.

Corrente Calamo.

Mr. Lloyd George's new advance on the road to Collectivism is probably compulsory. Even Mr. Bonar Law admitted that the "only thing to be done was to give the Government full power to use to the utmost all the resources of the country, including its industrial resources"; and, at the moment, ammunition is probably a more pressing need than dyestuffs. All will depend, of course, on the way in which the very drastic new powers are used; but that will always be the case under State Socialism, and on the rock of the abuse of such powers State Socialism will ultimately go to pieces. Meanwhile Governments will be harassed by the incompetents, of capital and labour alike, to find soft or well-paid jobs in return for votes; will hardly ever dare to use compulsion; and when they do will mostly make scapegoats. It is not a little odd that, with all the talk about conscription for the Army, we have, for the time, at any rate, found voluntary service sufficient, and that it is in connection with the provision of arms and ammunition that compulsory service has been first found necessary. The train of thought thus inevitably suggested is in many ways an interesting one. The needs of peace are in some respects as exigent as those of war, and the perils attending attempts to meet them by State compulsion probably greater; but we expect they will have to be risked ere many years pass.

As will be seen elsewhere in our "Parliamentary Notes," the arrangement with Mr. Montague Meyer has been revised. The first gave him 2½ per cent. commission up to £600,000, 2 per cent. between that and £1,000,000, and 1½ per cent. beyond that. The new revision knocks half per cent. off the 2 per cent., making it 1½ from £600,000 upwards. Having on the first £600,000 earned £9,000, Mr. Meyer now agrees to earn on the next £400,000 an excess of only £2,000 (or ½ per cent. extra), instead of £4,000 (or 1 per cent. extra). It does not even now seem quite clear why Mr. Meyer is to be paid this, or whether, and if so, why, while thus acting solely for the Government, he remains free to do similar business on his own account. Possibly further questions may elicit information on these points.

"Speculative" is a word often applied to builders by many people who do not appreciate its full and serious meaning. The building of streets of new houses in the suburbs of London, or elsewhere, is a speculation indeed, or a lottery in which the prizes are few and far between, and the blanks very numerous. There are men who make money out of the trade, and, after selling the houses they have put up, somewhere or other, retire and live happily ever after. But the struggle is severe, and only the fittest or the most fortunate survive the strain. The recent report of the bankruptcy of a London builder, on his application for a discharge, given elsewhere, is an example of the difficulties and dangers that beset this business. Beginning in 1881, with a capital of some £300, and his trade as carpenter, he started on a career of speculative building, and in 1912 he failed, with unsecured liabilities not far from £200,000, and with assets, chiefly made up of equities in his properties, which he estimated as worth more

than this big total, but which now only seemed likely to bring in about £2,700. Of course, his failure was mainly due to depreciation in value of his houses since 1907, though there was also loss in brickmaking and pressure by mortgagees. The total cost of the properties he built came out at £1,909,845, which he managed to mortgage for £1,476,960. After all this money has passed through his hands, he is now left high and dry. But how many financiers, landowners, architects, surveyors, house agents, traders, and lawyers have made their profits out of his enterprise meanwhile, and have had good cause to bless this long career of a broken "speculative builder"?

A serious and troublesome drawback to the comfort of the house-dweller and the interests of house owners seems to be increasing, and as those who suffer are naturally shy of letting it become known, the remedy is difficult of application. We are referring to the House Mite—a small creature to be seen creeping along the furniture, clothes, walls, and generally all over the house. The creatures appear to have favourite haunts; but in a really infested house no part is quite free. It is believed they come from furniture stuffed with certain fibres, but evidence of their presence therein has not yet been established; and this is a delicate point, as law cases have turned on the question of the furniture bringing in the mites. The matter is being investigated by the Entomological Department of the Imperial College of Science and Technology, and Prof. H. Maxwell Lefroy informs us drastic methods have quite eradicated the pests from one house. A safer and simpler method is being tried, and Prof. Lefroy is desirous of hearing of other infested houses where it can be applied. He invites correspondence from owners of houses or residents therein, in strict confidence, who are willing to pay for the chemical used—not a very large matter. Letters should be addressed to Prof. H. Maxwell Lefroy, M.A., Imperial College of Science and Technology, South Kensington, S.W.

The Manitoba Parliament Buildings seem likely to cost four and a half-million dollars instead of three millions, although the contracts were let for less than the last-named amount. There is apparently the usual political squabble over the matter, in which one party seeks to fasten responsibility on the other, and the other tries to evade it by finding a scapegoat. Our only information at present is a long article in the *Manitoba Free Press*, of February 13 last, from which we gather that because Mr. Simon, the architect, has consented to forego his commission on the extra cost, he is to be blamed because it has occurred. At present there is not a scrap of evidence that this is so, and the remarks of the Manitoba Minister of Public Works seem to us unwarrantable. He is reported to have said:

We also found that the architect who drew the plans was a better drawer of artistic pictures than a calculator of bearing power and strains. This is not meant offensively. He has given valuable service in the artistic way. You will remember that a committee of the House selected the plans from a number submitted, so the Government is not responsible for having employed him.

"Here," remarks our Canadian contemporary, "is an alibi for the Government at large. The architect is made the scapegoat, and the Government hides behind the Com-

mittee of the Legislature." It certainly looks very much like it. The allegation seems to be that some change in the nature of the foundations has necessitated the extra cost of fifty per cent. on the building, and that for this Mr. Simon is responsible. We do not believe it. The *Manitoba Free Press* says:

The only public record to date of the activities of the architect subsequent to the acceptance of the design has been the announcement that with his consent the buildings have been moved nearer the river bank than was first intended—a change that proved inexpensive, as the excavation already done was utilised in the main.

"Where," it asks "does the responsibility of the architect begin and end, and where is it traversed or overridden by that of the Government?" That, in our opinion, is what the Government is determined shall not be known, whatever injustice is done to Mr. Simon.

The sub-committee appointed by the Manchester Engineers' Club to consider what steps could be taken by the club to enable the engineering industry to take advantage of the present situation have presented their report, which is based partly upon opinions expressed during the debates which have been held at the Club during the last few months, and partly upon information gathered from many sources and individuals. They recommend: (1) That an Association of Engineering Manufacturers is desirable; (2) that such Association should have as its objects the matters detailed; and (3) that the constitution of such Association should be as outlined. It is proposed to establish a central exchange and headquarters, and, in the largest towns at home and abroad, to establish various committees to deal with Parliamentary and general purposes, external (sales) organisation, internal (producing) organisation, patents and inventions, technical education, publications and advertisements, and finance. Special committees could be appointed from time to time as occasion might require to deal with temporary or special matters. The contemplated activities of these committees are set out in the report, which seems to us, whether combined with, or the result of extension of existing organisations or not, likely to command every prospect of success if it gets the whole-hearted support of the industry and adequate financial backing.

It is suggested by those who ought to know, that the health of London is endangered by the accumulation of street-refuse which has resulted owing to the shortage of railway-trucks and barges, and the Government and the railway companies are being asked to facilitate better arrangements for getting rid of the refuse. There is no doubt about the accumulation; but the degree of the nuisance varies, as usual, so much in different districts that we incline to think it due to local neglect or inability in some measure. It is hardly noticeable in the City, which always heads the list as regards the promptness and completeness of its scavenging. East and west thereof the merest stranger can always tell the City boundaries by the contrast between the condition of the streets and those of its adjacent boroughs, and a comparison of the hours at which cleansing is completed. Elsewhere, especially throughout the nearer suburban fringes, neglect is very visible; and the results, now the wind is beginning to dry the streets, are more than usually foul and irritating dust-clouds, which may quite

possibly be responsible for the prevalence of influenza which is keeping the doctors busy.

A useful paper on "Cinder-Concrete Floor-Construction Between Steel Beams," by Harold Perrine and George E. Strehan, Juniors, Am.Soc.C.E., was presented on March 3, 1915, to the American Society of Civil Engineers. The paper treats of the special form of cinder-concrete fireproof floor-construction between steel beams, which is used extensively in New York City and elsewhere. It comprises a brief general discussion of the characteristics of the material with reference to fire-resistance, corrosion, strength, etc. The major portion, however, deals with the results of an extensive series of tests on cinder-concrete, plain and reinforced, both in the form of cylinders and typical slabs, as a means of obtaining sufficient accurate basic data for use in compiling possible future regulations. The tests were conducted by the Department of Civil Engineering, Columbia University, partly in co-operation with the Bureau of Buildings, Borough of Manhattan, New York City, and will be found fully set out in the February issue of the Society's "Proceedings."

The bicentenary of "Capability" Brown, the landscape gardener and architect, occurs this year. Lancelot Brown was a native of Kirkharle, where he was born in humble circumstances in 1715. Brown became a kitchen gardener in the employment of Lord Cobham, and soon gained a considerable reputation for the taste and skill with which he improved the flower gardens and terraces of Stow House, and other country mansions where he was encouraged to pursue his designs. The result was that "Capability" Brown—he won his sobriquet on account of his incessant talk of the capabilities of landscapes for purposes of ornamental gardening—founded a new and thoroughly English school of landscape gardening, which came to supersede the geometric style illustrated to perfection in the famous gardens at Versailles. The latter was floral geometry, Brown's gardens had the touch of nature that atoned for and even disguised the hand of art. Natural lines and curves and undulations were the aim of the great Northumbrian gardener, who has left the imprint of his undoubted genius on the historic gardens at Kew and at Blenheim Palace. Lancelot Brown was architect as well as gardener, and a fine example of his work in the double capacity remains at Croome Court, Worcestershire, the seat of the Earl of Coventry.

We regret to learn that Mr. Ernest Newton, A.R.A., President of the Royal Institute of British Architects, is confined to his house by a severe attack of influenza, and will be unable to deal with correspondence during the next few days.

The Local Government Board have sanctioned the required loans for carrying out a sewerage scheme at Hatton, near Sheffield, and the Billericay Rural District Council have agreed to instruct Messrs. Willcox and Raikes to proceed with the plans.

The contract for the water supply to the village of Ipstones was given in August last to Messrs. H. Taylor and Sons, Basford, Stoke-on-Trent, and the works are now nearing completion. The reservoir is situated near Foxt-road, and the mains are laid via Park-lane to Sandy Lodge, thence via High-street and Church-lane to Ivy Cottage, a further main is laid via Back-lane and The Turn to Park-lane. The reservoir is of 35 gallons capacity, and is constructed of concrete, with double arch roof. The contract price was £1,722.

OBITUARY.

Mr. Thomas Groome Barker (of Messrs. Barker, Ellis, and Jones, architects, of Cooper-street, Manchester) died suddenly on Saturday last, in his 86th year, at his residence, the Mount, Gilda Brook-road, Eccles. Mr. Barker was, until last year, when he retired, an active member of the firm; but even after his retirement he took an interest in the work in hand, and came down to the office once or twice a week. All his life he had been a most devoted student of architecture—he was a pupil, and afterwards a partner, of the late Mr. Edward Walters, the architect of the Free Trade Hall, at Manchester. Mr. Barker assisted in making the drawings for the Free Trade Hall, Williams Deacons Bank, Mosley-street, and many large warehouses and other buildings of that date for which Mr. Walters was architect, and in 1865 he and the late Mr. Ellis took over the practice. Among his chief works are the Manchester Grammar School (Langworthy Building), the old Stock Exchange (now pulled down), the Commercial Buildings, Cross Street, the Manchester Guardian Offices, Cross-street; the Union Assurance Buildings, Chapel Walks; Barton Union Offices, restoration of Flixton Church, the Deaf and Dumb Schools (Pendlebury wing), extensions to the Manchester and Liverpool District Bank and the Williams Deacon Bank, and a number of houses and branch banks in Lancashire and the neighbourhood. Mr. Barker, who was a Fellow of the Manchester Society of Architects, spent a considerable time in Italy, and had travelled in France, Belgium, Germany, America, Spain, Greece, and Egypt.

Mr. William Dyack, M.Inst.C.E., Burgh Surveyor of Aberdeen, who had been laid aside by illness during the past four months, died on Monday morning at his residence in Forest-road, Aberdeen, in his 58th year. Prior to his connection with the municipality of Aberdeen, Mr. Dyack, who served his apprenticeship with the late Mr. John Willett, M.I.C.E., was a member of the staff of the engineer-in-chief of the Great North of Scotland Railway Company, and acted as resident engineer on a section of that company's Buckie extension railway. For thirty years Mr. Dyack was associated with the burgh Surveyor's department of the city of Aberdeen, being appointed assistant-surveyor in 1884, and chief in 1892, on the retirement of Mr. William Boulton, M.I.C.E. He has carried out with success numerous and important improvement schemes during that period. Mr. Dyack is survived by Mrs. Dyack and a family of one son and two daughters.

Mr. William Willett, of Sloane-square, the son of the founder of the firm, who died in 1913, died on the 4th inst., at Chislehurst, at the age of 58. In early life he spent some time in a shipping office before joining his father. Mr. Willett was principally known by his advocacy of the "Daylight Saving" Bill, which was twice introduced into the House of Commons, but failed to pass. He converted a good many people to his fad, among them Mr. Winston Churchill, who, speaking at a big meeting in favour of the movement in 1911, when he was Home Secretary, prophesied that a grateful posterity would raise statues in honour of Mr. Willett and decorate them with sunflowers on the longest day of the year. In spite of the exposure of the absurdity of the proposal by scientists, and of the very reasonable opposition offered by agriculturists, and the rest of us who have to work long hours, late and early, it is not impossible, in these days of fondness for Parliamentary interference with the ordinary liberty of the citizen, that had Mr. Willett lived another twenty years he might have seen universal beginning work early made compulsory by his time-trick. That the law would ever have been obeyed is extremely unlikely!

Alderman John Potts Wardle, J.P., "father" of the South Shields Town Council, died at his residence, Stanhope House, South Shields, on Friday, aged eighty-one years. He had carried on business

in South Shields for a great many years as a timber merchant and sawmill proprietor, and he founded and personally controlled the firm of J. P. Wardle and Sons.

PROFESSIONAL AND TRADE SOCIETIES.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.—Lecturing last Friday to the Birmingham Architectural Association, Mr. Halsey Ricardo suggested that the classrooms of the elementary schools formed a suitable field for an attempt at forming a school of decorative painters, but it was not proposed that the decorations should be permanent. The attempt should start with a simple scheme. He thought the heraldic treatment of colour was the right treatment to begin on, and the use of heraldic emblems helped to give a picturesque reinforcement to the study of history. Heraldry was a kind of history in shorthand. Various groups of men and women should be formed to undertake this elementary decorative work, and as the standard rose under such practice the more able decorators might be employed to decorate walls on an ascending scale of importance, such as workhouses, infirmaries, hospitals, waiting-rooms of stations. And when the quality of permanence had at last been earned and acquired they might adorn the walls of public libraries, town halls, museums, and churches.

THE LONDON SOCIETY.—The third annual meeting of the London Society was held on Tuesday, in the rooms of the Royal Society of Arts. The Earl of Plymouth, who presided, in moving the adoption of the report, said that the object of the Society was to turn the gifts which Providence had given them to such purposes as would be most useful and helpful at the present time. They were copying the example set at the time of the French Revolution, when during that time a great deal of the rebuilding of Paris was conceived and definitely set on paper. The Society had engaged a number of professional men who were sufferers by the war to prepare plans for the future development of London. Sir Aston Webb described some of the work of the Society, particularly with regard to the advocacy of improvements in South London, the rebuilding of Charing Cross Bridge and the station, and the extension of London arterial roads.

NEW ZEALAND INSTITUTE OF ARCHITECTS.—The annual report of this Institute, just to hand, states that the work of the Council and its committee has been comparatively light this year, owing to the fact that, while the Registration Board is carrying out the duties imposed upon it by the Act, only business of a routine nature could be done. Last year the membership of the Institute consisted of 105 Fellows and 95 Associates. To-day the membership is: Fellows, 124; Associates, 118; Life Honorary Fellows, 5 making a total of 247. During the year the Dominion was toured by Messrs. Davidge and Reade on behalf of the Garden Cities and Town-Planning Association of London, and lectures of a highly interesting and instructive nature were given in all the chief centres. The Institute was actively associated with the movement, and did all in its power to assist the lecturers. It is believed that the visit will be of permanent value to the community. During the session of Parliament just concluded an Act has been passed amending the Wages Protection and Contractors' Liens Act, whereby Section 59 is altered. The new Act provides that the period of thirty-one days during which the employer shall retain 25 per cent. of the contract price shall commence from the time of completion of the main contract, and not from the date of expiry of the period of maintenance. The new Council is recommended to approach the Government for a grant for the purpose of establishing, in one or other of the university colleges, a degree or certificate course in architecture, and that the Government be asked to decide in which of the university colleges the course should be established. The Educational Committee is earnestly

requested to take into their immediate consideration the preparation of a standard of examination which will form the basis of examination for the certificate of membership. An energetic expression of condemnation and abhorrence of the ruthless and vindictive destruction and spoliation of the ancient historic buildings and treasures of France and Belgium by a savage and unprincipled enemy has been passed by the Council.

RESTORATION OF RHEIMS CATHEDRAL.—In the course of a lecture at the Horniman Museum, Forest Hill, on Saturday afternoon, Prof. F. M. Simpson, F.R.I.B.A., described the damage done to Rheims Cathedral, and said the question was whether it could be made good. He himself believed that it could, and some of the indemnity which the Germans would have to pay might well be earmarked for the purpose. Taking into consideration the great strength of the building, he hoped that, on further examination, the stability of the piers, walls, and arches would not be found to be affected, nor the surface of the stone to be altogether ruined. He knew nothing, however, of what had taken place in the last month. The damage done to the sculpture was more serious; but the French had good sculptors, and if they attempted restoration they would probably succeed. On the other hand, they might decide to leave the figures headless, as an example of German "culture." The lecturer referred to the substantial construction of the edifice, which had never been enlarged or cut into, and observed that few Gothic cathedrals in the world could have withstood such a shock so gallantly.

We believe it is not at present intended to hold the customary banquet this year which precedes the opening of the Royal Academy.

A new technical school is about to be built for the Oxford Education Committee, from plans by Mr. W. H. Castle, their architect.

The work of building a new church at Ashford, Ireland, has been begun this week. Mr. P. J. Munden, of Trinity-street, Dublin, is the architect, and Mr. P. J. Kinley is the builder.

The Local Government Board have sanctioned the borrowing by the corporation of Middleton of £5,000 for the erection of houses on the Boarshaw Estate, and have granted sixty years in which to repay the money. A start has been made in the erection of these houses.

A meeting of the management committees of the unions affiliated to the London Building Industries Federation is to be held to-day (Friday) to discuss the question of approaching the London Master Builders' Association for an immediate advance in wages and improved working conditions.

The rural district council of Devizes have been officially informed by Messrs. Carter, Jonas, and Sons, agents to the Crown, that the new highway in the parish at Bonham, leading from Love-lane to Darlett-lane is now completed. It is 22ft. in width, and has a thickness of 9in. of road-metal. The road will be formally opened on Lady Day.

At the last meeting of the city council of Birmingham, it was decided, on the recommendation of the town-planning committee, to purchase for £1,000 fourteen freehold cottages now standing on the site of a suggested extension of Walford-road, to be included in the South Birmingham Town Plan. Warwick-road is narrow and crooked, and insufficient for the traffic which now passes down it. To widen the existing road would entail an expense so great as to be almost prohibitive, and hence it has been decided to provide a new road which will face the property in Albion-road.

On the south wall of Room XVII. at the National Gallery has been hung the reunited halves of a painting representing a family group tentatively attributed to Jan Vermeer, of Delft. The left-hand portion of the picture showing a man and boy and part of a table was presented to the Gallery in 1900 by Mr. C. Fairfax Murray, and it bore the title "The Lesson." In 1910 the right-hand half of the canvas, showing the mother with a girl seated beside her, was found in Paris, and purchased out of the Clark Fund from its owner, M. Max Fiersheim. The two pieces as now joined correspond in character, composition, and colour.

Correspondence.

BARTON OR MANOR HOUSE.

To the Editor of the BUILDING NEWS.

SIR,—Can you or any reader tell those who are interested, as I am, what is actually the difference between "a barton" and "a manor-house"? Webster gives a synonymous meaning: "A.S. 'bere tun,' courtyard, grange; from 'bere,' barley, and 'tun,' an enclosure. 1. The domain lands of a manor. 2. The manor itself. 3. The outhouses and yards of a house. (Southey.)"

The Rev. S. Baring Gould—no mean authority—writing, however, the other day, described a large West-country house, Bouringsleigh, West Alvington, near Kingsbridge, Devonshire, as being "a barton, and not a manor." There are instances of more or less well-known Bartons in various counties, both in East Anglia and away in the Midlands or far in the West, including such as "Barton Farm," the Abbey Grange, Winchester; Barton Segrave, Northamptonshire, now destroyed, but for which a license to crenellate was granted to Nicholas de Segrave; also Barton Farm, Wilts, not to name others.

A "bartoner" was an overseer of the barton, grange or farm stores of a religious house; but does the meaning of "barton" necessarily imply a religious foundation in contradistinction to a manorial holding? In Gote's "Growth of the English House" no mention of the name appears to be given; neither is the term employed in Parker's "Domestic Architecture in England." I do not remember seeing the word "barton" used in the distinctive way employed by the Rev. Baring Gould as quoted above; and as he gives no explanation, I presume he takes it for granted that it is a recognised and accurate distinction.—I am, etc.,

VARIE LECTONES.

UNHEALTHY SCHOOLS.

SIR.—I would like to ask: If "through ventilation" is good for children in schools, why is it not good for their parents in churches; and, whether there is a single church in the kingdom ventilated on that principle? "If not, why?"

Surely, "what is sauce for the gosling is sauce for the gander." Children, who have no choice, may be blown through the window, but not a soul would enter a church under the same conditions of ventilation(?).—I am, etc., T. WOOTTON GREENWOOD.

44, Brazen-nose-street, Manchester.

SIR,—"Caloric" attaches too much importance to the purity of the air, and not enough to the temperature. It is essential to maintain coolness and movement of the air, for this promotes metabolism and activity of the body, and with cross-ventilation this is obtained.

When it has been pointed out to "Caloric" and other correspondents that down-draught has not been felt in the Staffs and Derbyshire schools, the unceasing repetition of "Down-draught is a crying evil" is childish. The temperature of classrooms should be 60deg. F., and well swept with currents of air during play-hours, etc. The great fault nowadays is the desire to live in rooms that are warm, and consequently unhealthy.

"Caloric's" challenge has been met. Seeing for himself the advantages gained in a school designed by well-known authorities of cross-ventilation is the only practical method of refuting his statements. He will also find that mechanical ventilation is inferior to cross-ventilation, and just as inefficient as he imagines.—I am, etc.,

D. WYNNE THOMAS.

Glenthorne, Nunthorpe.

SIR,—The letters from advocates of cross-ventilation appearing in your current issue do not, I think, call for any special comment beyond that, as with the other communications from the supporters of that method, the truth of the saying, "Save us from our

friends!" seems in their case to be fully verified; also, that we are getting accustomed to the "Out-of-your-own-mouths-are-ye-condemned" class of evidence they have so consistently favoured us with.

"Truth will out," I suppose, and they certainly seem to be rather unfortunate in their faculty for, to express it colloquially, "putting their foot in it" and "upsetting their own apple-cart," or, in other words, "letting the cat out of the bag."

If the promoters of cross-ventilation would only have the courage of their convictions, if they have any, and "face the music" when challenged, as they have been, this question might be definitely settled, one way or the other, without more ado; but it cannot avail either them or their cause to, ostrich-like, hide their heads in the sand, for though in some cases discretion may be the better part of valour, in their circumstances it simply means their downfall.

From their evident disinclination to "walk into the parlour" when invited, it would almost appear as if they thought the children's champions were Redskins hungering for their scalps; or do they now know only too well what a fraudulent old humbug "the blizzard," as they have so well named it, is, and that it has not a leg to stand upon? It looks extremely like it.

The issue they have to face is a perfectly simple one, and is clearly defined as follows:—(a) No provision is made for the extraction of the heated expired air at the higher levels to where, under normal conditions, it naturally ascends, and from where it should therefore be withdrawn; (b) a continuous downward current of cold air from open windows, or, in other words, a "down-draught"; (c) cooling and returning to be re-breathed, the ascending, heated, expired air; (d) condensation and precipitation on to the children of the moisture with which expired air is heavily charged; (e) condensation and precipitation on to the children of the moist and poisonous exhalations from the body; (f) the creation of acute differences in the temperature of the body occupying a superheated stratum of air, and drenched from above with cold air.

Let the promoters of cross-ventilation satisfactorily reply to these points; but irrelevant and irresponsible statements such as we have hitherto been exclusively regaled with should be avoided, as, so far as their case is concerned, they only make confusion worse confounded—and, goodness knows, it is quite confused enough already.—I am, etc.,

ANTI-DRAUGHT.

SIR,—If those "fresh-air-at-any-price enthusiasts" responsible for the existence of that hydra-headed monster cross-ventilation, alias "the blizzard," so justly described as "the Frankenstein of ventilation," do not now speak from their inner sanctuary in the Temple of the Winds, within which they seem to have hermetically sealed themselves, but persist in taking refuge behind the "vague and nebulous" utterances of lay worshippers in the outer temple, who seem so far to be only able to curse a cause already damned, then they must for ever hide their diminished heads and behold their doubly-discredited wind-god, "the blizzard," descend into its dishonoured grave which they themselves have dug for it by their own damning admissions of its inefficiency, "a perfect tearing blizzard" being merely one of the appropriate descriptions they have applied to their gusty deity, who by this time must be getting somewhat suspicious and distrustful of his devotees.

Who has not, in this sanitary age, met with that heaven-inspired genius, the discoverer of "the only perfect" method of ventilation? Alas! we all know him but too well; he is like the poor, and is especially rampant on school committees—his happy hunting-ground. Staffordshire would appear to be no exception to the rule in this connection when it evolved from the recesses of its intelligence that boisterous, blustering god of the winds and presiding deity of through-draught, cross-ventilation, later, when they discovered its illimitable capabili-

ties as a draught-producer, rechristened "the blizzard."

They might, perhaps, have been indulgently forgiven for so fondly looking upon their "ugly duckling" as a swan of the whitest feather, that being a not unusual parental illusion; but though it may be very pleasing to the worthy folks who gave it birth, that cannot be accepted as a valid excuse for the Herod-like massacre of the innocents involved by its adoption, and for which they assuredly must, and shall, be held accountable.

When, in an evil hour for schoolchildren, they conceived the inquisitorial idea of roasting them in a highly-heated atmosphere below breathing-level, and freezing them with a deluge of icy-cold air from above in the form of through-draught and down-draught, which they now admit it consists of, we are paternally advised to bear it "until the maximum point of endurance is reached," and not to mind "earaches" or "pains in the body" resultant from its action, as these were all for our good, if we only knew it—from all of which it would appear that, after a winter course of "the blizzard," not even death itself would have any further terrors; but, on the contrary, might be looked upon as a happy release.

These Staffordshire Aerials have laid a very heavy cross indeed on the shoulders of their shivering victims, and one can only hope, for their (the victims) sad sakes, that there is some truth in the consolatory saying that "the back is made to bear the burden." If this is really so, then compassionate Nature must of a surety have had "the blizzard" in view when she made that wise and merciful provision.

When that gaunt and sinister spectre, through-draught, stalks through the tempest-torn, blizzard-blown classrooms on its pale path of pain, withering with its icy breath all within its touch, and, like some hideous ghoul, battenning on the shuddering forms of the young, it would be a righteous judgment on those benign beings who called that dread and grizzly thing from the howling wastes to make our halls of light and learning cold caverns of the wind, if they themselves were enchained therein. Certainly no greater punishment could be desired for them.

We have had many extraordinary systems (?) of ventilation inflicted upon us by the "fresh-air-at-any-price enthusiasts," each of which, as with this one, we were portentously assured was "the last word in ventilation." "The blizzard" is certainly "the limit," and stands absolutely without a rival as a concrete example of pure and unadulterated, cold-blooded "frightfulness."

Everyone, of course, recognises the value of fresh air and the dangers of foul air; but to attempt to deal with these elements in such an extreme, unreasoning, and crudely drastic fashion is only to convert the remedy into a greater curse than the evil, and prove an injury instead of a benefit—excepting, perhaps, to doctors, undertakers, and other kindred interests; and if there is any gratitude in those professions at all, they should certainly subscribe, out of their gains, for memorial-tablets to be placed on the schools, or sepulchres, in which that ruthless "baby-killer," "the blizzard," has been installed.

We are informed by its supporters, with ghoulish glee, that the mentally defective were the first on which it was perpetrated. This shows what a very great amount of caution was considered necessary for that critical occasion—on the principle, doubtless, of self-preservation being the first law of nature. Therein they acted wisely and discreetly, for if it had been rashly tried on others able to defend themselves, it would not have been difficult to guess what, at the inquest, the verdict would have been.

As a suggestion has been made that "the blizzard" is a device of the Eugenists to eliminate the weaklings, does not this, if true, afford a *locus standi* for the intervention of the Society for the Protection of Children from Cruelty?—that is, if this particular form of child-murder is not, in these advanced days, looked upon as legal, if not, indeed, commendable. If that is the motif of the Eugenists, they have certainly got a safe and sure instrument of "removal" in "the blizzard."

Though it may be very disappointing, if not indeed mortifying, to these latter-day regenerators of the human race—who seemingly desire to improve us off the face of the earth—to know that they are not really the originators of that inquisitorial method of child-torture, "the blizzard" (for which they ought to be fervently thankful), there is no blinking the humiliating fact that it is of hoary antiquity, and was much favoured by the troglodytes—but, we gather, in warm weather only, these interesting ancestors of ours being evidently not quite so witless, nor so heartless, so far as their young were concerned, as to resort to it in the winter, when, like sensible people, they preferred to be warm and comfortable and out of a cold draught, the evils of which they doubtless fully recognised and carefully avoided.

It has been reserved for their twentieth-century descendants to commit the enormity of employing it in the depths of winter; but—mark this—on little children and the mentally defective only, as they doubtless take very good care not to practise it too rigorously upon themselves.

It is a cold and bitter look-out indeed for the hapless schoolchildren, hard-gripped in the icy and relentless clutch of the "fresh-air-at-any-price fanatic," devoid of either bowels or mercy for his helpless victims.

As the crusade on behalf of the suffering little ones is now, by "Caloric's" straightforward challenge, carried into the territory of that "ugly bruiser of young children, 'the blizzard,'" whose gloomy citadel of icy air, walled with the frozen sighs of babes, is doomed to fall, surely, before this well-merited fate overtakes it, its champions will put up a fight of some sort and refuse to take their dying god's defeat "lying down"? We, of course, don't want any empty platitudes about the value of fresh air—that is admitted by everyone. We are now dealing solely with the disadvantages of foul air and cold draughts as represented by "the blizzard," or cross-ventilation, and the specific accusations as formulated should be met—if they can be, which remains to be seen; but, if they are not, then the discomfited and discredited champions of a bad and a lost cause must for ever quit the field and permit their erstwhile victims, the helpless schoolchildren, to reap the fruits of the happy victory over that cold, cruel demon of the air, "the blizzard."—I am, etc.,

CRUSADER.

At Ayr, the new Young Men's Christian Association premises were opened on Monday. They are centrally situated at the lower end of High-street, and cost £7,180.

A proposed increase of powers of the Liverpool Corporation with regard to street improvements and the planning of new roads, in order to keep pace with private enterprise, together with the enlargement, owing to the exceptionally high civic credit, of the ability to raise money by means of bills, formed the subjects of a Local Government Board inquiry held at the municipal offices on Friday by Mr. R. C. Maxwell, an inspector under the Board.

In the course of the renovation by H.M. Office of Works of the Roman Pharos on the height to the rear of and above Dover Castle, the removal of some stonework, probably erected during the last two or three centuries, has opened out a Roman sentry-box inside the ancient tower. These renovations have also been extended to the Colton Tower, one of the Norman defences of the castle, and the removal of stonework has disclosed an entrance doorway to the tower and an oven where the troops in Norman days did their cooking.

At the last meeting of the Stafford Town Council the borough engineer, Mr. W. Plant, A.M.Inst.C.E., submitted a report on the scheme prepared by him for new sewage-disposal works, together with plans and a provisional estimate, amounting to £19,000, of the cost thereof. The report described the installation of an experimental bacteriological filter at the disposal works, and stated that the results obtained therefrom showed that the sewage could be efficiently purified on bacteriological lines. The report also described the existing sewage-disposal works, which have been in operation for eighteen years. After a long discussion the report was adopted, amendments proposing the engagement of an expert and visits to other recent sewage-disposal works being rejected by large majorities.

Our Illustrations.

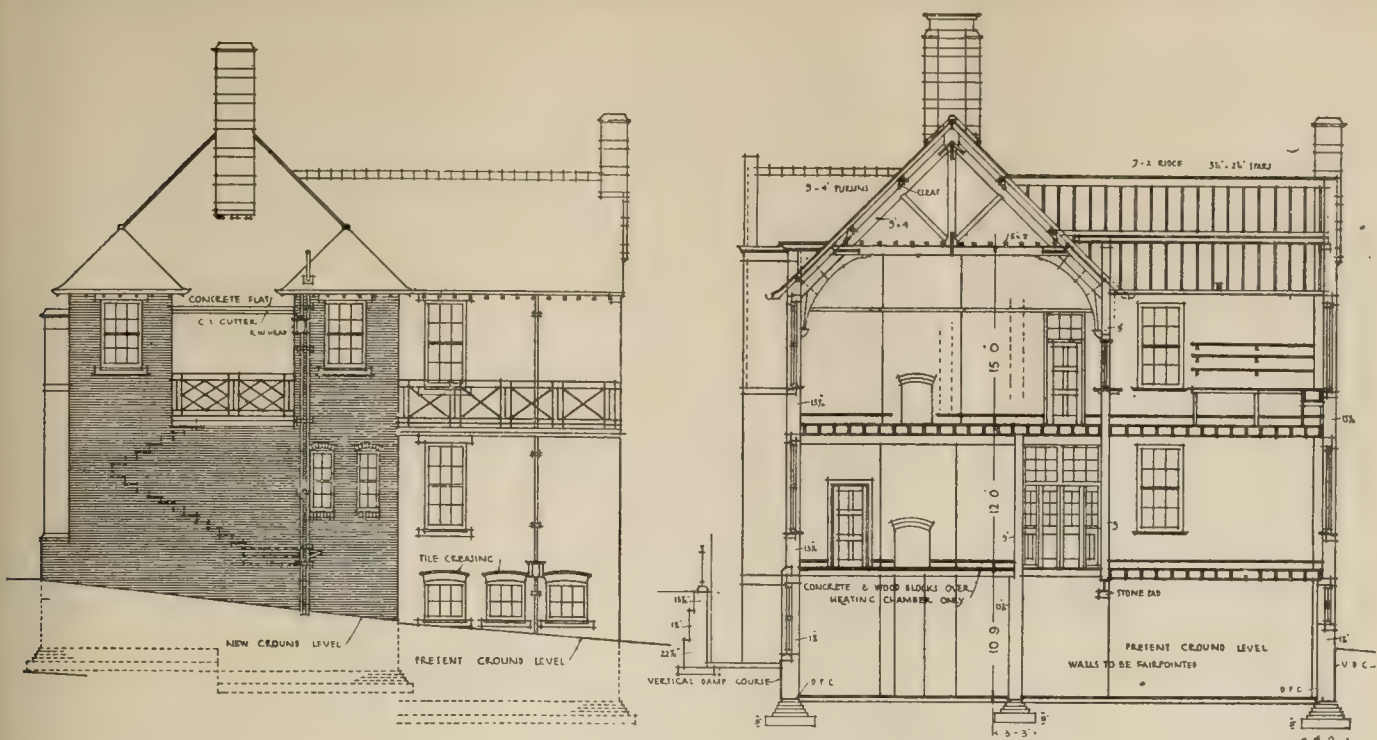
THE NEW BUILDINGS, TRONGATE IMPROVEMENT, GLASGOW CROSS.

SELECTED DESIGN.

This block of buildings, forming the City Corporation Improvement Scheme, is about to be carried out in the reconstruction of the frontages in Trongate and High-street, Glasgow. The chosen design has been made to harmonise with the Tolbooth Steeple, and while a similar character architecturally has been adopted for the warehouse premises, the necessities of light and construction have certainly been kept carefully in mind. The side of the Steeple forthwith to be exposed will be treated similarly to those already previously open to view, both in respect to wall surface and the corners of the tower. The central portion of new frontage, which is set out on the curve, has been recessed above the ground-floor and also kept as low as possible, so as not to detract from the dominating effect of the Steeple. An open port, acting as a flying-buttress, connects the Steeple with the main building. As a feature in the treatment of the design this is most valuable, by associating the two structures in a pleasing manner; also constructionally this connection insures the stability of the fine historic Tron Steeple. The new market-cross to be joined also to this tower, while satisfying the requirements of the competition, has cleverly been made to contribute strength to the well-known Steeple. It will be seen from our illustrations that a traditional type of market-cross has been adopted, and as a matter of fact it is practically similar in area to the market-cross at Edinburgh. An important factor in the competition was the question of the maintenance of the Steeple; so that problem was specially considered, and the adopted plan is largely due to these considerations. We give the developed elevation of the new buildings, together with a section illustrating their connection with the Tron Steeple and market-cross. The plan shows the new frontage-line by which the awkward angle is to be removed, in accordance with the decision of the City Improvement Department, and the perspective view furnishes a capital idea of the effect of the whole alteration as now determined on. Mr. John Keppie, F.R.I.B.A. (Messrs. Honeyman and Keppie), of 257, West George-street, is the architect. His design was selected from among thirty-nine plans submitted in a recent competition. Mr. Alexander Noble Paterson, A.R.S.A., F.R.I.B.A., of Glasgow, and Mr. A. B. McDonald, M.I.C.E., the City Engineer, acted as assessors. Their report described this design, which they recommended for adoption, as most satisfactory in regard to adjacent buildings, and that the elevation "complete in itself composes admirably with the Cross Steeple, and that without sacrificing in the matter of lighting the practical requirements of a shop and warehouse building." The retention of the Steeple in its new isolated position is effected in a sound manner structurally with excellent architectural effect and successfully handled in a traditional style. The cost will be about £28,512.

CHURCH OF ST. MICHAEL AND ALL ANGELS, BEACONSFIELD, BUCKS.

The foundation stone of the above new church was laid during November by the Bishop of Buckingham. The plan of the church is in the main cruciform in shape, with a broad nave 77ft. 6in. in length, with aisles and single transepts placed north and south, and a chancel 35ft. 6in. in length and 22ft. wide. A chapel is placed on the southern side, and the organ-chamber, good sized vestries, and lavatories are on the north side of the chancel, passages being arranged for returning communicants on either side of the chancel. The nave is divided into five bays, the columns being enriched by twisted cavetto mouldings and carved ornaments. The roof is of open-timber



EAST ELEVATION.

SECTION C D

TUBERCULOSIS DISPENSARY, SIMS STREET AND TENTER STREET, SHEFFIELD.

Mr. F. E. R. EDWARDS, F.R.I.B.A., City Architect.

construction, while that in the chancel is of barrel form. The nave-floor slopes 14in. from west to east. A lofty arch, rising nearly the whole height of the church, divides the nave from the chancel. At the springing of this arch is placed a rood-beam, upon which is erected a carved rood. The east window is comparatively small, and is placed high in the eastern gable so as to give as much space as possible above the altar, which is itself raised nine steps above the nave-floor level. The side chapel is conveniently situated, so that the south transept forms a sort of extra nave to the chapel, giving a total chapel accommodation

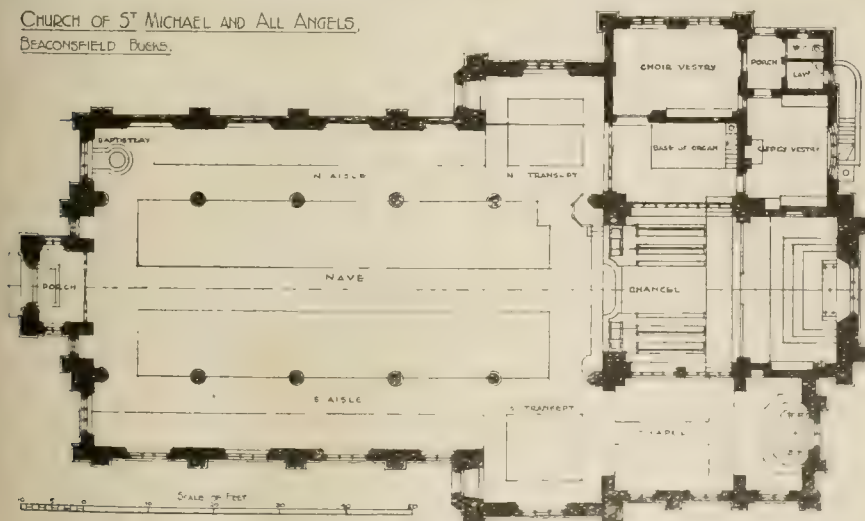
designs of Mr. G. H. Fellowes Prynn, F.R.I.B.A., of 6, Queen Anne's Gate, Westminster, S.W.

WROUGHT-IRON RAILINGS AND BALUSTRADE TO EXTERNAL STAIRS DONIBRISTLE MANSION, FIFE, N.B.

These famous terrace-stairs form the approach to Donibristle Mansion, a seat of the Earls of Moray overlooking the river Forth, a mile or two distant to the east of the great Forth Bridge. The balusters to the stairway are composed of rectangular panels consisting of two twisted vertical

bottom rail. The square pilasters are surmounted with tulip flowers and buds. Others terminate with aloes, and placed at intervals, greatly increasing the diversity and charm of the design. The presence of arrow-pointed dog-bars furnishes some evidence against the tradition as to the work being Flemish in origin, because these particular features are distinctive of early eighteenth-century Scottish ironwork. The monogram is that of Anne Countess of Moray, temp. William III. We are indebted to Mr. J. Scott Lawson for the loan of this excellent measured drawing, which includes a plan of this stairway. He has lent us another, of the wrought-iron arched gateway at Donibristle, which we shall publish next week.

CHURCH OF ST MICHAEL AND ALL ANGELS, BEACONSFIELD, Bucks.



ST. MICHAEL'S CHURCH, BEACONSFIELD.

Mr. H. FELLOWES PRYNN, F.R.I.B.A., Architect

TUBERCULOSIS DISPENSARY, SHEFFIELD.

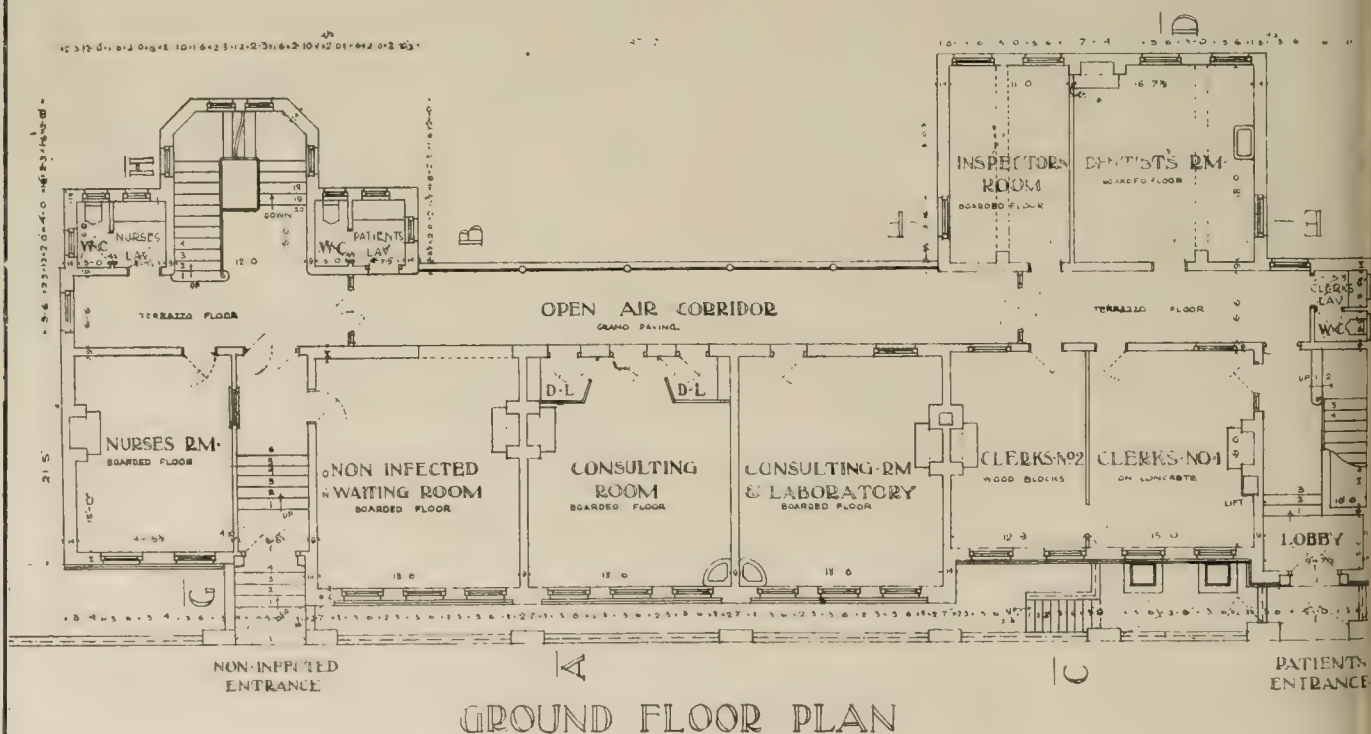
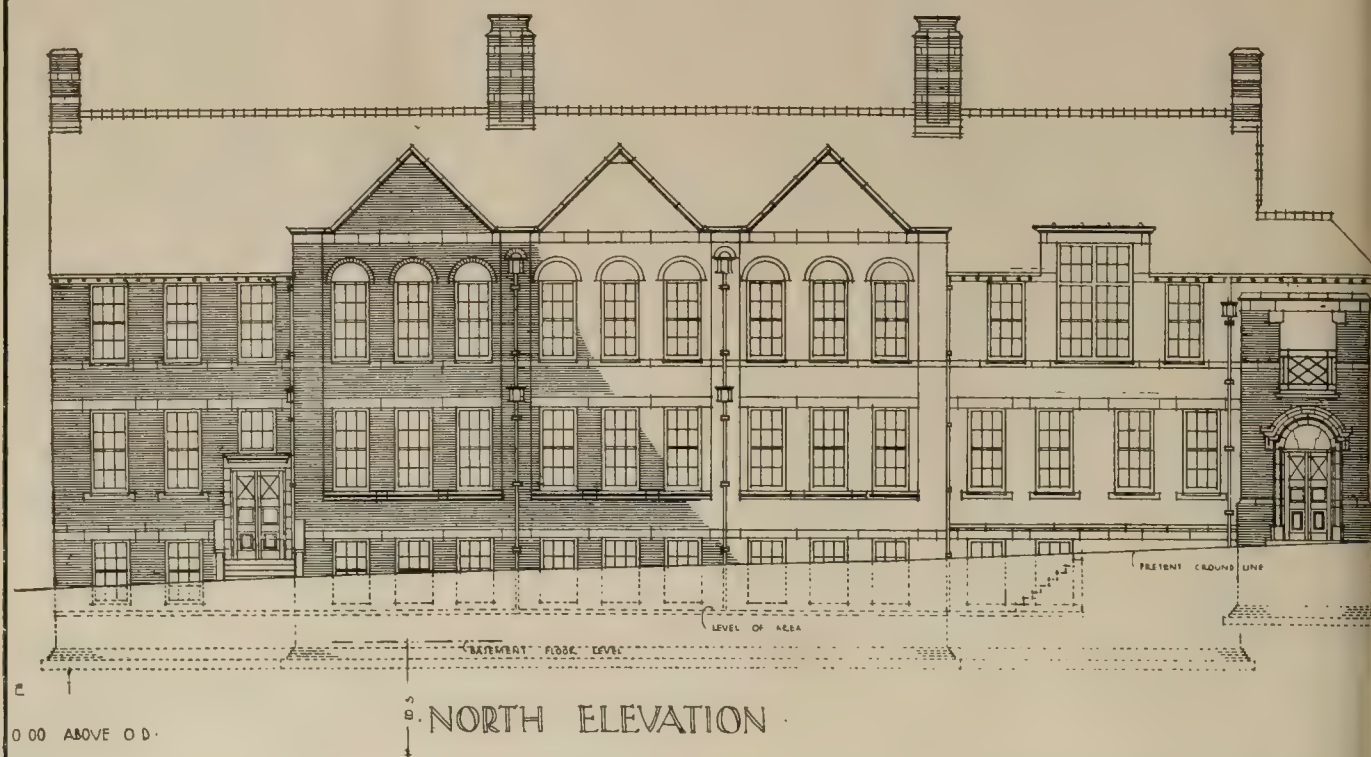
These illustrations are reproduced from the working drawings lent us by the City Architect, Mr. F. E. Pearce Edwards, F.R.I.B.A., Sheffield. This tuberculosis dispensary is one of the first buildings of its kind to be erected in this country. We give three elevations, two plans, and a section. The premises forms part of the local scheme for the treatment of tuberculosis initiated in the city some years ago, and the building will replace some present temporary quarters used for consultation and tuberculin treatment, a work which has considerably outgrown the existing accommodation. Fireplaces and radiators are employed for heating. The site of the dispensary is situate in Sims-street and Tenter-street, Sheffield. The walls are of brick.

The modern parish church at Highfield, Southampton, is being enlarged by an extension westwards of the nave, providing 300 additional seats. The cost will be about £3,500. The church, a good example of modern work in the 13th-Century style, with broach spire on the south side, at the junction of nave and chancel, was built sixty years since from the designs of the late Raphael Brandon. The present scheme was designed by the late Mr. John Oldrid Scott, F.S.A., and is being carried out under the direction of his son, Mr. C. M. Oldrid Scott. The builders, who began operations in July last and expect to complete their contract in June, are Messrs. Bowman, of Bournemouth.

of sixty adults. The organ faces towards the chancel and the north transept, and so will be heard to full advantage. A small baptistery is formed at the west end of the north aisle. The total accommodation of the whole church will be for 647 adults. The church is being carried out by Messrs. Franklin, Ltd., of Deddington, from the

bars and a quatrefoil with scrolled top. The nevels are square, with moulded concave caps surmounted by ball terminals. The central panel over the garden alcove bears the monogram of "A. C. M." below a coronet. The balusters to the terrace are of vertical bars, every alternate one bearing two scrolls with arrow headed dog bars between on top of

CITY OF SHEFFIELD HEALTH COMMITTEE.



TUBERCULOSIS DISPENSARY

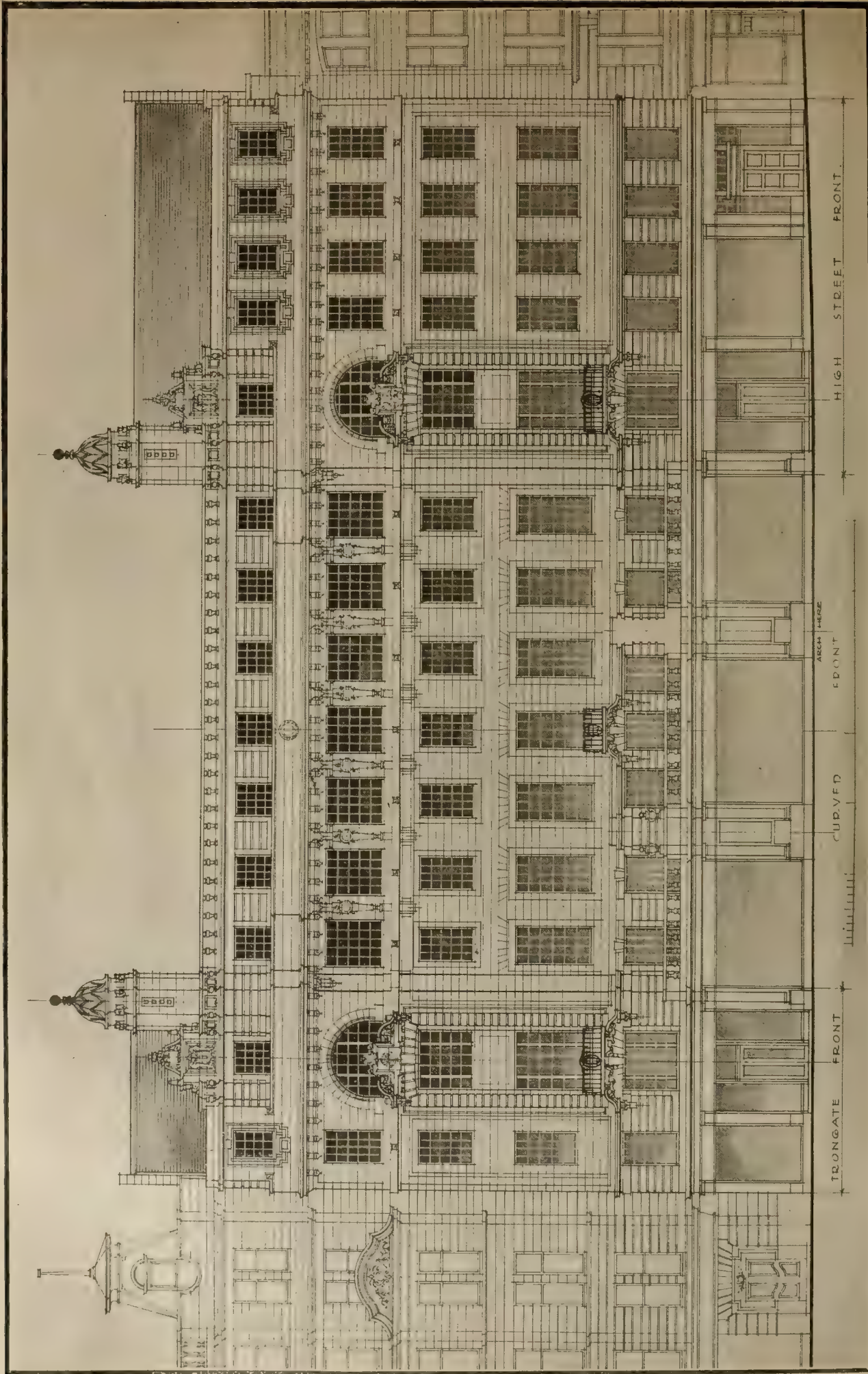


Building Intelligence.

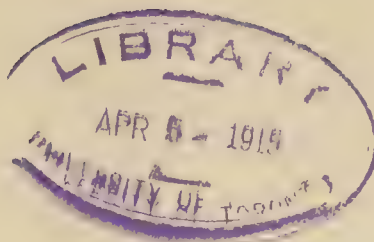
WATER SUPPLY AND SANITARY
MATTERS.

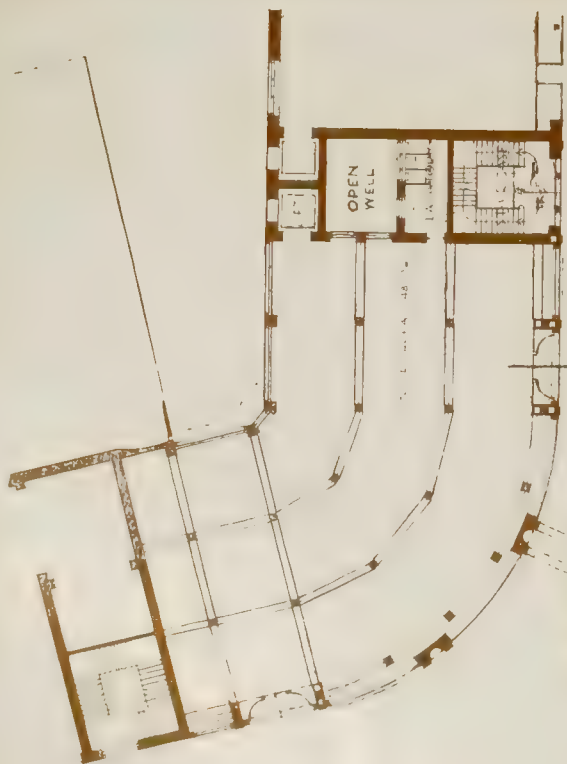
KARACHI - A

A note, printed in the Nottinghamshire Field Club, held at Stoke-on-Trent. Mr Charles Masfield mentioned that in his paper published in the "Transactions" for 1913, he referred to the very unsatisfactory state in which four of them were. An appeal was issued by the council for funds to effect their preservation. These funds were forthcoming, and the work was entrusted to Messrs. Gawthorp and Sons, of London. The brasses which have been thus restored are: Norbury, 1360. Lady Hawys Bottiler; Clifton Campville, c. 1360, unknown lady (in this case the brass has been the interesting reverse side made and given to



NEW BUILDINGS (DEVELOPED ELEVATION), TRONGATE IMPROVEMENT, GLASGOW CROSS: SELECTED DESIGN.
MR. JOHN KEPPIE, F.R.I.B.A. (Messrs. Honeyman and Keppie), Architects.

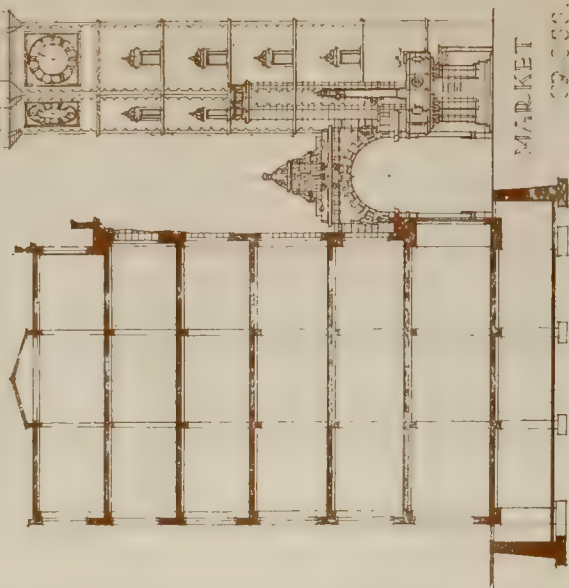




PLAN OF GROUND FLOOR.

Scale 1/4" = 1' 0"

CROSS SECTION



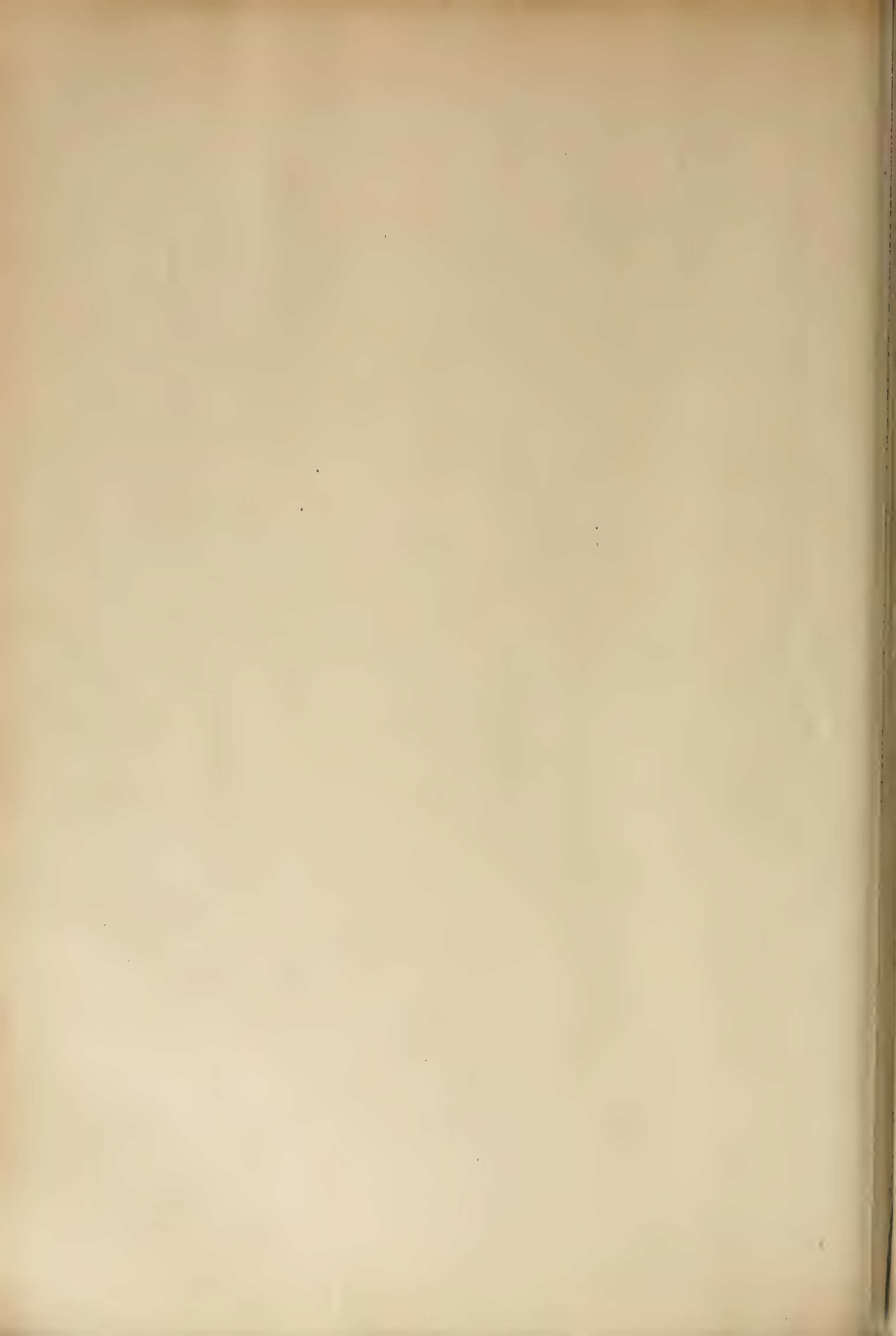
MARKET CROSS.





NEW BUILDINGS, TRONGATE IMPROVEMENT, GLASGOW CROSS: SELECTED DESIGN.

Mr. JOHN KETTEL, F.R.I.B.A. (Messrs Honeyman and Keppie), Architect.







CHURCH OF ST. MICHAEL AND ALL ANGELS, BEACONSFIELD

MARCH 12, 1915.



D. BUCKS.—MR. G. H. FELLOWES PLYNNE, F.R.I.B.A., Architect.



NOTE: RAILING FOR STAIRS
DESIGNED BY THE
OFFICE OF THE
ARCHITECT.

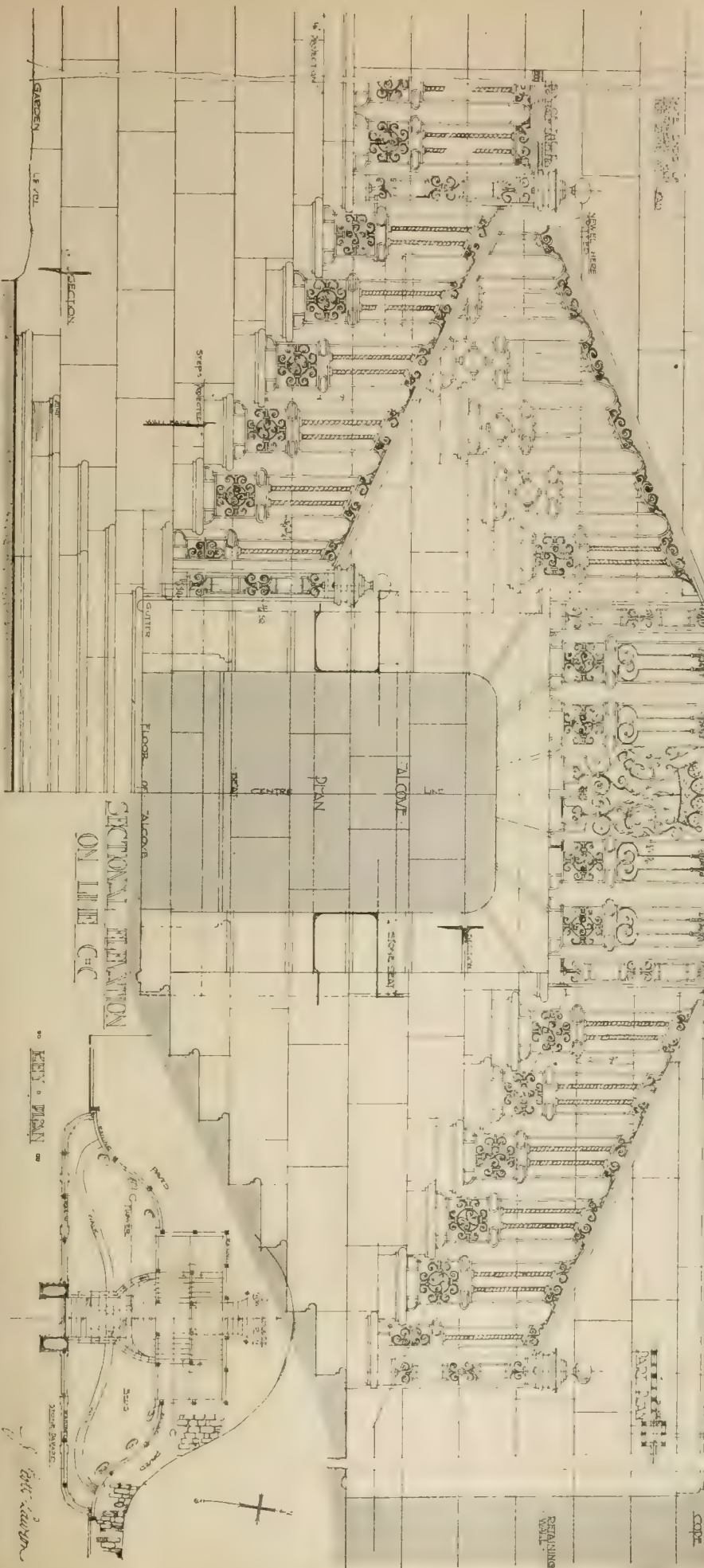
DONBRISTE ESTATE - FIVE
WROUGHT IRON RAILINGS & BALUSTERS
OF STONE STAIR LEADING UP TO HOUSE

SCALE: 1/4" = 1' 0"

PLAN OF DONBRISTE



DESIGNED BY
THE OFFICE OF THE
ARCHITECT.



SECTIONAL ELEVATION
ON LINE C-C

KEY: PLAN

RIVER

LEGAL INTELLIGENCE.

JOHN CATHLESS HILL'S BANKRUPTCY.—At the Bankruptcy-court, on March 4, the discharge was suspended for two years of John Cathless Hill, builder, Archway-road, Holloway, N., who was adjudged bankrupt in May, 1912. It was reported by the Official Receiver that the Trustee in Bankruptcy estimated that the total unsecured indebtedness would amount to £192,318. Moreover, he was of the opinion that not more than £2,705 would be realised from assets, consisting principally of equities of redemption in house properties, and valued by the bankrupt at £217,957. No dividend was likely to be paid. The bankrupt, who since March, 1910, had been a member of the L.C.C., was before 1881 a journeyman carpenter.

FORM IV. AGAIN.—SUCCESSFUL APPEAL.—*Foran and Cartwright v. the Attorney-General* (before the Master of the Rolls, Lord Justice Phillimore, and Mr. Justice Joyce).—Their Lordships last Friday delivered a considered judgment in this case upon the appeal of the plaintiffs from a judgment of Mr. Justice Warrington, dismissing the action brought by them against the Attorney-General, in which they asked for a declaration that they were, as trustees of a property known as Appleton Farm, near Dover, entitled to make a return in respect of that property both as regarded minerals and surface. It appeared that in 1910 the farm was let to a man named Prebble, but the minerals were reserved to the lessors, and were not comprised in any mining lease. On September 12, 1910, the solicitors to the trustees were served with a notice to make a return on Form IV. within thirty days. They made a return of the surface value. In 1910 the farm and minerals were sold to the Deal and Walmer Coalfields, Ltd., for £5,500. Thereupon the trustees claimed to have the site value of the minerals as on April 30, 1909, assessed at a substantial figure. This was refused by the Inland Revenue, and Mr. Justice Warrington refused to make the declaration the plaintiffs asked for, and dismissed the action with costs. Hence the present appeal of the plaintiffs.—Mr. Justice Joyce, who delivered the judgment of the Court, said that in their Lordships' opinion the copy of Form IV. supplied to or served on the appellants was not a proper or intelligible mode of requiring a return of particulars respecting minerals, and certainly did not treat them (as the Commissioners were bound to do) as a separate parcel of land. By ninety-nine out of one hundred people it would not have been understood as a notice to furnish a return in respect of unworked minerals. It would, indeed, require not merely a lawyer, but one of exceptional ability and caution, to understand the relevance of Form IV. and the documents accompanying it to unworked minerals, and they did not hesitate to conclude that the return made by the appellants on Form IV. with respect to their lands was not the return of the owner referred to in Section 23. Sub-section 2. In fact, there had not at present been any such return in the present case, nor any sufficient or valid notice from the Commissioners requiring such return. Appellants were entitled with respect to unworked minerals to make a return upon the proper form, in pursuance of proper notice from the Commissioners, and to have a separate provisional valuation of the minerals in question. When that had been done they were not aware of anything precluding the appellants from having a substituted capital value pursuant to Clause 23, Sub-sections 1-4, and Clauses 2 and 3 amended by the Revenue Act of 1911. Section 2. The result was that the order of the Court below must be discharged, and there must be a declaration that the Commissioners were not entitled to treat the return made by the appellants on Form IV. as the return referred to in Clause 23. Sub-section 2, and a declaration that the appellants were entitled to have a provisional valuation of the unworked minerals as a separate parcel of land. The appeal was, therefore, allowed.

DISPUTE OVER ARCHITECT'S FEES FOR WORK AND PLANS.—An architect's motion to set aside a Registrar's adverse decision upon his claim to fees for plans and negotiations for the building of a cinema theatre at Sydenham came before Mr. Justice Astbury, taking company winding-up business, in the Chancery Division. The motion was to discharge the Registrar's order in the matter of the Sydenham New Theatre Co., Ltd. Mr. Simmons represented the architect; Mr. Ashton Cross appeared for the company. The company was formed, Mr. Cross stated, to build a cinema theatre. No theatre was built, and upon that fact the architect's claim turned. The company was wound up voluntarily, a voluntary liquidator being appointed. It fell to him, first of all, to deal with the architect's claim, which was for half-commission, as the plans were not used, and for other work done. Then the matter went before Mr. Justice Neville. It appeared that

undoubtedly an agreement had been made by which the architect was to receive a certain total sum in settlement; but before that sum was paid, the architect withdrew his assent from the agreement. The dispute coming before Mr. Justice Neville at this stage, Mr. Justice Neville found the architect was no longer bound by the agreement, and it was open to him to sue for a "quantum meruit." That he proceeded to sue for. His claim was that he had prepared plans, made arrangements in respect of party-walls, done work to secure the consent of the county council, and generally undertaken business which involved a large amount of documentary matter. The liquidator desired to see the papers. Some he got from the company and other sources. The architect had already received a hundred guineas. He was now claiming a further £147. The inquiry was complicated, and the liquidator felt himself obliged to call in an architect—a skilled man—to assist him with the papers. The liquidator awarded £100 out of the claim of £147, and the architect then asked that the decision of the liquidator should be set aside and his claim paid in full. Everything turned on the requirement to examine documents, and the contention raised the important question where the documents should be seen. The architect preferred they should not go out of his office. That was the position he was contending for. The discussion before the Registrar turned on the two questions: (1) Are the books and papers to be produced by the architect? (2) If so, where?—His Lordship: And the order is that he shall produce his documents to the liquidator.—Mr. Ashton Cross: The architect maintains: "I am not bound to produce my papers. If you can see them, it must be at my office." The liquidator replied that he must have them where he could go through them. There was clear legal authority for saying it was the duty of a claimant to produce his papers. The Registrar decided that the architect must submit his plans, specifications, and papers to the liquidator to enable him to adjudicate upon the claim.—His Lordship observed that the order of the Court had been that the architect was to prove a "quantum meruit." The architect issued a summons before the Registrar when the liquidator rejected his proof for £147, and eventually the claim got up to £187. The Judge added: It is time this matter was settled soon, or there is no knowing what it will grow to. Why should not the architect give up the documents and prove his claim?—Mr. Simmons said he wished to do so, but he also wished for the opportunity to produce evidence.—His Lordship: The proper form is to have it struck out if you are not willing to let the liquidator have the documents on which you base your claim. This is going into great expense. Cannot you agree to something—split the difference between the £140 and the £187? I think both sides are probably considerably to blame. You see, the liquidator has already adjudicated on the claim by rejecting it.—Finally counsel consulted, at his Lordship's suggestion, and it was agreed that the order should be rescinded by consent. The architect and the liquidator agreed to appear before the Registrar, the architect undertaking to submit the plans, papers, and specifications on which his claim was based, and have the matter decided in the presence of an architect on either side. All costs were to be in the discretion of the Registrar.

THE VENTILATION OF OFFICES.—In the King's Bench Division, on Tuesday, Mr. Justice Low and a special jury heard a case in which a clerk named John R. Colby sued a firm of druggists in Pall Mall East—Messrs. Hooper, Struve, and Co., Ltd.—for personal injuries (viz., the contracting of phthisis) arising, as he alleged, from their negligence. Plaintiff stated that he entered the defendants' service as a clerk in November, 1906, when 16 years of age. In the same room as the plaintiff there were employed the secretary of the defendants (H. E. Robbins, who suffered from phthisis) and two other clerks. The room, according to the plaintiff's case, was of a size unsuitable to accommodate four persons. In October, 1909, the secretary became ill with phthisis. Plaintiff contracted phthisis in October, 1910, with the result that since May, 1911, he had been incapable of doing any work. He called evidence to show that Mr. Robbins was in the habit of spitting on the floor, and used the telephone and speaking-tube, and that these instruments and the office were not disinfected.—For the defence, Sir John Collie, medical examiner to the London County Council and Metropolitan Water Board, deposed that the defendants' premises in Pall Mall were very light and well ventilated. His evidence was corroborated by Mr. Francis John Allen, medical officer to the City of Westminster.—Mr. Justice Low, in

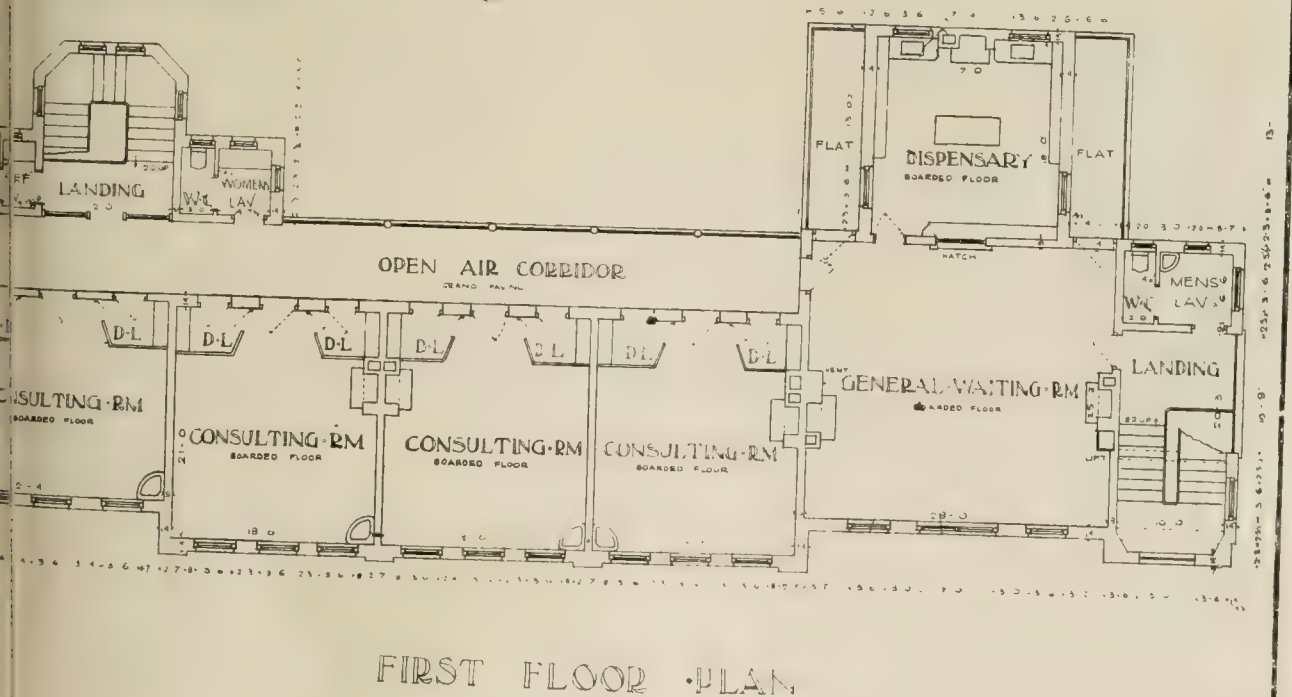
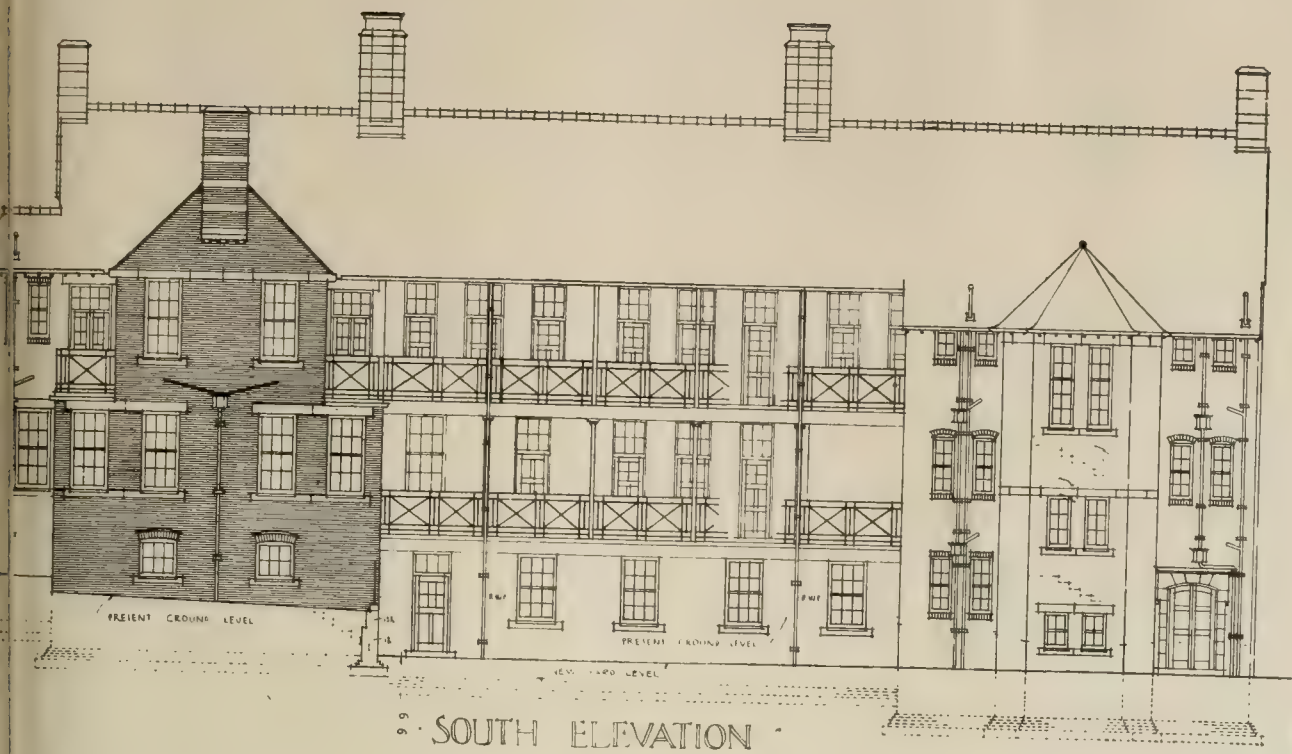
summing up, said on the evidence there was no shadow of foundation for saying that the rooms in which the plaintiff was employed were unsuitable.—The jury found a verdict for the defendants, and judgment was entered accordingly.

BUILDER'S APPEAL FAILS.—HOLDING v. BANKS.—On Friday, the 4th inst., the Court of Appeal (the Lord Chief Justice and Lords-Justices Swinfen Eady and Bray) heard the appeal of Mr. John Joseph Holding, builder, of Willesden; from a judgment of Mr. Justice Sankey in the King's Bench Division. This was Mr. Holding's second appeal, the Court in the first instance (the Lord Chief Justice and Lords-Justices Kennedy and Swinfen Eady) having ordered a retrial of his action on the ground that Lord Justice (then Mr. Justice) Phillimore had misdirected himself on the law. (See report in our issue of March 13, 1914, p. 383.) The defendants were Messrs. E. J. S. Banks and F. S. Banks, and the plaintiff claimed damages for work done and materials supplied, and also sought to recover money due on a certificate. Mr. Holding, who appeared in person, said he claimed £385 and interest until payment of debt in respect of an architect's certificate for building-work done on the defendants' behalf, and £356 for other work done and material supplied in connection with a building contract. Both Mr. Justice Phillimore in the first trial, and Mr. Justice Sankey in the second, had entered judgment for the defendants; but in the last trial plaintiff was awarded £5 damages for illegal trespass on the part of the defendants. Mr. Holding argued that the Judge had gone wrong on the facts, and that he (the plaintiff) should have judgment.—Mr. Shakspeare, for the respondents to the appeal, said the dispute arose out of a contract by the plaintiff to build houses and shops for the defendants at Willesden. From the summing-up of Mr. Justice Sankey it appeared that Mr. Holding, in addition to claiming sums already mentioned on a certificate, and for work done and plans and materials supplied, asked for damages for an alleged wrongful trespass on the building site and premises by the defendants. Messrs. Banks denied liability, and they counterclaimed for damages incurred, they said, because work done was not up to the contract. The Judge, however, non-suited the plaintiff on his first two heads of claim, and gave him £5 for the wrongful trespass, holding that the defendants had been guilty of a technical offence. The defendants, said counsel, alleged that the certificate was obtained by fraud, and the judgment of Mr. Justice Sankey upheld that.—In reply, Mr. Holding said the work done was valued by independent surveyors at £738 and £740 respectively. The evidence showed that £385 was due to him on the certificate. He admitted he did not proceed with the work, but that was because defendants' plans were wrong.—The Court dismissed the appeal, with costs, the Lord Chief Justice remarking that the decision of the Judge was on the facts, and the Court saw no reason for interfering with the decision.

Reports on housing and town-planning schemes in Dundee were brought under notice at a meeting of the town council on Friday, and a long debate took place on a motion that the reports be accepted. By 17 votes to 2 the council decided that consideration of the reports should be delayed until the close of the war.

At Monday's meeting of Walsall Town Council a long discussion occurred on a recommendation of the gas committee that a tender be accepted for the construction at the Pleck gasworks of twenty vertical retorts for £18,521, the cost to be defrayed as far as possible out of the gas works reserve fund. The committee reported the additions to plant as urgently needed, and as involving a saving of from £3,000 to £4,000 a year; but by 19 votes to 9 it was decided to postpone the provision of more retorts for twelve months.

Mr. H. B. Sewell, district coroner, has held an inquest at Bexley Heath touching the death of Mary Ann West, aged sixteen, who had been employed in doping aeroplane-wings at Messrs. Vickers' works at Crayford, and who died after complaining of a relaxed throat. James Peters, manager of the aeroplane department, stated that three kinds of ventilating machinery had been installed, and Dr. Willcox, of the Home Office, had said that the ventilation could not now be improved. Dr. Donkin, of Bexley, stated that death was caused by the fumes of the tetrachlor ethane contained in the dope. The jury returned a verdict to the effect that deceased died from poisoning due to the fumes of the dope used by her in the course of her work.



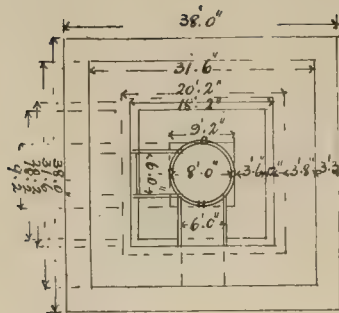
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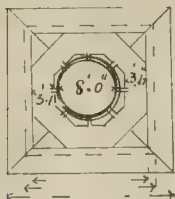
Intercommunication.

REPLIES.

[13139]. — **FACTORY CHIMNEY.** — In reply to "E.C." I herewith give particulars of chimney (built under my supervision) which I trust will be of some assistance. The said chimney was built on a similar waterlogged base as stated in question. Assuming that the ground below the gravel-bed is known to be sound,



Plan at A.B.



Plan at C.D.



Plan at E.F.

Scale of feet
0 5 10 20 30

then build on concrete bed, as shown in sketch. If said ground is uncertain in its stability, then provide raft composed of good second-hand Cammell steel railway metals, to receive concrete bed.—James Bromley, Rothwell Estate Office, Miller-arcade, Preston, Lancs.

[13139]. — **FACTORY CHIMNEY.** — I should not like to answer this query without much more information than querist gives, especially as regards the last part. On Dec. 4, 1911, Mr. Henry Adams read a paper before the Society of Engineers, of which an abstract appeared in this journal of Dec. 8, 1911. In an appendix, Mr. Adams gave detailed calculations, and a design for a chimney 150ft. high and 4ft. 3in. internal diameter, including the concrete base, and means for protection from lightning. I expect the paper was given fully in the Transactions of the Society of Engineers for that year.—Kappa.

An urgent need exists in Mansfield for the provision of workmen's houses to be let at a low rental, and the corporation propose to build forty houses, twenty of which will be let at 4s. 6d. a week, and twenty at 5s. A site has been secured in a field on Baum's lane, and the scheme is estimated to cost about £7,400: £6,000 for the houses, £425 for street works, and £975 for land.

PARLIAMENTARY NOTES.

TIMBER FOR THE WAR OFFICE.—On Thursday, March 4, Mr. W. Young (L., Perthshire, East) raised once more the question of the contract made with Mr. Meyer for the purchase of timber for the War Office. It was, in his opinion, a bad business blunder, and he warned the Government that if they did not terminate the arrangement they would incur odium in the country.—Mr. Booth (L., Pontefract) invited Mr.

sary, and had placed himself unreservedly in the hands of the First Commissioner. The matter was being considered, and it was hoped that terms of rearrangement would be made at an early date. The First Commissioner did not agree that the Office of Works would have been justified in taking the easy course of accepting the lowest tender when they believed they could buy more cheaply by adopting the present method. Because they had the courage to adopt what the First Commissioner thought was a better method, the Office had been denounced by men who had not the material facts before them. He (Mr. Beck) thought the House would admit that this was a frank and open statement, only possible during a political truce. The Office of Works had taken it for granted that hon. members were actuated solely by a desire for the public good, and they could not believe that any member would raise the question for the sake of personal advertisement or personal annoyance to the Government. (Sir H. Dalziel (ironically): "Thank you.") He maintained that the transaction was defensible in every way, and it would be a great injustice and a detriment to the public service if Mr. Meyer were cashiered, as some members desired. Since the commencement of this agitation the Office of Works had received many letters, sent quite spontaneously, commending the transaction. One correspondent was of opinion that the country had been saved at least £80,000. Mr. Bonar Law (Leader of the Opposition) said the question whether or not the country had got good value for its money was not the only question. There was another question—namely, whether the transaction was entered into by the Office of Works with the ordinary care and circumspection which one had a right to expect in a transaction of this kind. He did not agree to a great deal of the criticism that had been directed against the Government, and was inclined to say that the method adopted by the Government of employing one agent was the best method in the circumstances. To that extent he approved of what the Government had done; but that had to be qualified, because at the same time they employed one agent they sent out inquiries all over the place, and that would tend to raise prices. He was bound to say that, looking at the transaction to see whether it was one that an ordinary reasonable business man would make, it was impossible that anyone could defend what was done by the Government. He thought the Department had admitted that it was done too hastily. That was all the House had a right to expect the Government to admit. Never had a commission been paid to such a large extent, and some limit ought to have been put on it at the very beginning. The fact that no limit was imposed was a proof of the unbusinesslike character of the bargain. He assumed that Mr. Meyer had acted honourably, and had done good service, because he had no reason to take any other view. The whole trouble had arisen because the Government had not realised that special training was required to deal with immense transactions of this kind, and they had not utilised the business ability which was available to help them. That was his complaint. It seemed a pretty hopeless business to expect to get Government work done on ordinary business lines. They would go on in the same old way, and when the war was over there would be an inquiry, which would show that there had been an amount of extravagance which would make all experience of previous wars seem insignificant. After the Boer War he suggested that the Government should hunt for the best business man they could find, and put him in the War Office to superintend and be responsible for everything that was bought and sold. He considered that the Government should strengthen the staffs of their departments by putting in business men who would give their services for the purpose of saving the country money. (Cheers).—Sir J. H. Dalziel (L., Kirkcaldy Burghs) complained that time after time when he had raised this question he had received evasive, shuffling, and mis-leading replies from the Government, upon whose part there had been an absolutely intentional want of candour towards the House. Who was it who had cooked the list of 200 people among whom the Government were said to have made inquiries? The right hon. gentleman went on to read from a letter from the Office of Works to a timber firm, stating that it was not the intention of the Government to place their orders with one merchant. As a matter of fact, some hours afterwards they actually placed their orders with one merchant.—Mr. Acland (Secretary to the Treasury): Not one merchant, on buyer.—Sir J. H. Dalziel said he was surprised at this sensitiveness of the young men on the Treasury Bench.—Mr. Acland: We don't wish to be bullied quite so much. What we objected to was the right hon. gentleman's comment on the letter.—Sir J. H. Dalziel: The hon. gentleman

Harold Baker to justify his assertion in a previous debate that a section of the timber trade were obviously trying to squeeze the Government, in regard to which a strongly worded resolution of protest and denial had been passed by the Timber Trades Federation.—Mr. Beck (Junior Lord of the Treasury) said the First Commissioner of Works (Lord Emmott) had requested him to read an authoritative statement on behalf of the Office. He read a long statement as to the circumstances in which Mr. Meyer was appointed, in which it was emphasised that all the transactions undertaken by Mr. Meyer, with the exception of purchases, were outside the purview of an ordinary agent buying on commission. The First Commissioner was not informed of the details at the outset; but he had since made inquiries, and had not the least doubt that a very great saving of public money had been effected. So far from apologising for it as a business transaction, the Office of Works maintained that the nation had been well served, and that it had effected a great saving. Mr. Meyer fully and freely accepted the position that in view of the magnitude of the transactions some new arrangement was neces-

will find quite enough to do to attend to his own Department. We have already had two Under Secretaries in this matter, and it is difficult to know where to get the information from. It is almost a case of pull Devil, pull baker. (Laughter.)—Sir R. Balfour (L., Patrick) said that his firm had been engaged during the last twenty or thirty years in importing timber, among other things. They had sold that timber to various agents in London, Liverpool, and Glasgow, and in every case the commission they had paid was 2½ per cent. They had striven many times to get a reduction of that charge, but without success. These sales were of considerable parcels to one buyer, so that no excessive amount of trouble fell to the agent. He was strongly of opinion that the commission which was being paid to Mr. Meyer was a reasonable one in all the circumstances.—Mr. H. Baker said that it was true that on a former occasion he had used the word "squeeze" in regard to the attitude of the timber trade. It was perhaps rather more forcible than the case warranted. He was ready to withdraw the words as a collective accusation against the trade as a whole. But he did think that high and excessive prices had been asked of the Government. It was a mistake to suppose that the War Office was still acting without considerable and valuable advice on the part of business men from the outside.—Mr. W. Young (Perthshire, E., Min.), on Wednesday, asked the Parliamentary representative of the First Commissioner of Works whether a new arrangement for the purchase of timber for the requirements of the War Office had now been considered or completed, and, if so, what were its terms?—Mr. Beck (Essex, Saffron Walden): Yes, sir. The commission payable will be as announced up to £600,000, and will be 1½ per cent. from that figure to a million.

TOWN-PLANNING SCHEMES.—In the House of Commons, on Friday last, Mr. Herbert Samuel (President, Local Government Board), in reply to Mr. Outhwaite, said the number of town-planning schemes made by local authorities, and finally approved by the Local Government Board, was four. Three other schemes had been made by local authorities and submitted to the Board for approval, and the Board had authorised ninety-one other schemes to be prepared. It might roughly be estimated that the area of land comprised in town-planning schemes approved or in contemplation was equal to about half the area of land already built upon in England and Wales. He had no information with respect to the number of houses built or to be built in connection with these schemes. The schemes did not require the erection of houses, but limited the number of houses to be erected on particular areas. It rested with the owner of the land within the area of the schemes to decide when building should take place, and, subject to the restrictions referred to, what number of houses should be erected.

The eight-and-forty little bronze statues which surrounded the monument to the patriots Count Egmont and Count Horn in the Place Petit Sablon at Brussels have been appropriated by the invaders and sent to Germany.

Mr. J. W. Gilbert, chairman of the Education Committee of the London County Council, opened on Thursday evening in last week the extension of Sir Walter St. John's School, High-street, Battersea. The school has cost £16,000, and will provide secondary education for 320 boys.

At the annual meeting of the South Carolina Association of Architects, held in Columbia, the following officers were elected: Mr. A. W. Todd, Charleston, president; Mr. J. D. Urquhart, Columbia, vice president; Mr. J. H. Sams, Columbia, secretary and treasurer. The association endorsed the proposed State Licensing Act.

An inquiry was held at the town-hall, Stoke-on-Trent, on Friday, by Mr. W. M. Cross, one of the inspectors of the Local Government Board, into the application of the town council to borrow sums of £950 for the purchase of land for the purpose of sewage-disposal at Trent Vale, and £590 for the purchase of land for a refuse-destructor at Tunstall.

In the Crypt of St. Paul's Cathedral, Admiral of the Fleet Sir Gerard Noel unveiled on Friday a marble portrait medallion, in a frame of alabaster, to the memory of Admiral of the Fleet Sir Frederick W. Richards, G.C.B. (1833–1912). The tablet is surmounted by the naval crown, and the sculptor, Mr. F. W. Pomeroy, A.R.A., has introduced several naval emblems. It is affixed to the wall, next to the tablet in memory of Admiral Sir Edward Codrington.

Our Office Table.

The small Committee of Inquiry which Mr. Herbert Samuel, President of the Local Government Board, has appointed "To consider the law and regulations relating to the construction and use of road locomotives and heavy motor-cars in Great Britain, and to report what amendments, if any, are desirable," includes several experts of high distinction, including Mr. P. M. Clostwaite, an engineering inspector to the Local Government Board; Mr. H. H. Humphreys, technical adviser to the National Traction Users and Manufacturers Association; Mr. I. E. Thornycroft, managing director of Messrs. J. I. Thornycroft and Co., and late vice-president of the association just named; Mr. E. J. Lovegrove, who for many years has been borough engineer to the Corporation of Hornsey, and recently surveyor to the late local body of that district; and Mr. J. Wilmot, County Surveyor of Worcestershire. Mr. E. Shortt, K.C., M.P., is the chairman, and Mr. R. J. Simpson, of the Local Government Board, is the clerk. We fear that until after the war it will be impracticable to legislate on so thorny and controversial a subject, but it will be desirable that the amendments needed in the law to render its operation equitable as between road-users and highway authorities should be threshed out by a trained body of men. A Joint Select Committee to consider questions relating to contributions by motor-omnibuses to the cost of road maintenance is also contemplated by the Government.

Professor J. B. Farmer, M.A., of the Imperial College of Science and Technology, has made for the Royal Borough Council of Kensington a special report on the planting and culture of trees in London streets. Professor Farmer states that the trees most suitable for planting in Metropolitan streets are the plane, the tree of heaven, the Jersey elm, and the Lombardy poplar. Other varieties worth trying are the lime, the single-leaved ash, Bolle's Poplar, and the pink hybrid chestnut. The trees should be planted, as far as possible, at equal distances from one another, say from 50ft. to 60ft., although narrow pyramidal trees might be a little closer together. The trees in any one street or road should be of one species only, and as far as possible they should be kept even in size, and be shaped on a uniform scheme. Whilst the plane is certain to continue to be the most thriving tree in London, there is something to be said in favour of avoiding monotony by the introduction of other kinds of trees into the streets. The plane stands pruning, and even the hardest cutting back, better than almost any other tree, except perhaps the lime. It needs, however, attention to prevent its naturally vigorous development rendering it unsuitable for the area at its disposal. It also labours under the suspicion of causing injury to the respiratory organs of delicate people, owing to the hairs which are shed by the leaves as they reach maturity, and still more to the stiff bristles that easily break off the ripe fruits and so get carried into the air. Professor Farmer, however, does not think the case against the tree, on this account, has been really proved, although in some foreign towns it has fallen into disfavour. As a rule the streets most suitable for trees are those which run north and south. In streets running east and west the trees may become a nuisance to the people who live on the side of the road facing north.

"Eye-witness" comments on the bombardment-resisting construction of many mediæval buildings in Flanders, such as the Templars' Tower at Nieupoort, and the church tower of Messines. The latter is, he remarked, in a more or less ruinous condition, as a result of the German bombardment four months ago; great blocks of masonry have been blown off it, the belfry has been shot away, the interior is completely burnt out, but the framework, though irregular in outline, and full of gaping holes, still stands defiant amid the surrounding ruins. The

church contained a very fine oak screen, in the centre of which was a life-size plaster crucifix. When the British evacuated the place on the 31st of October, the German shells had set alight to the woodwork, which was completely burnt, and everything in the church destroyed, with the sole exception of the crucifix, which was not touched.

At the meeting on Friday of the Metropolitan Water Board it was decided, on the recommendation of the Law and Parliamentary Committee, to withdraw from the Board's Bill, which received first reading on February 4 in the House of Commons, clauses 48 and 49, as they would in all probability be regarded by the Government as raising "questions of public controversy," which would prevent the measure from proceeding this session. Clause 48 sought to provide, in effect, that if a consumer gave notice of his intention to discontinue a supply, or left his premises without giving such notice, the Board might sever the communication-pipe. Clause 49 proposed to authorise the Board to recover the expenses where they had cut off the supply in consequence of "any default" on the part of the owner or occupier, the repayment of such expenses to the Board being made a condition precedent to the restoration of the supply. These clauses were opposed by certain of the borough councils on public-health grounds. It was decided to give instructions for the withdrawal of the clauses from the Bill. At the same meeting of the Board it was agreed to add seven years to the twenty-eight years of service completed with the late East London Water Company and with the Water Board in computing the compensation allowance to be paid to Mr. G. E. Holdron in respect of the abolition of his office of general superintendent for the Northern District in the engineers' department. An estimate by the chief engineer of a capital outlay of £3,300 for the laying of 1,070 yards of 6in. main and 5,470 yards of 4in. main for the purpose of affording a supply to houses proposed to be erected at Woolwich by H.M. Office of Works was approved. The work will be carried out under the Board's annual contracts. It was resolved that Mr. R. E. Reeves, A.M.I.C.E., first-class engineering assistant in the chief engineer's department (Western District), be transferred to the Littleton reservoir works as assistant resident engineer, at his present salary of £300 per annum, and that he be granted an honorarium of £50 per annum whilst engaged upon the works.

The Wrexham Rural District Council's housing scheme for Rhos advanced another step on Monday, when approval was made to certain variations in the accepted contract. The contractor, Mr. J. Morgan, had written that, as much time had elapsed since the acceptance of his tender, and that as all his contracts had been cancelled in the intervening period, owing to the war, he thought the Council should pay 10 per cent. more on the original contract price, 10 per cent. more on the schedule of prices, and agree to a few deviations in the specification. It was decided to accept the contractor's offer to carry on the work of erecting the twenty-two houses and the construction of the streets and sewers at a price of 10 per cent. above his original contract, and to allow the substitution of joists and doors of smaller diameter, glass of less weight to the square foot, and second-quality tiles in the sculleries. Mr. S. Davies, builder, Ponkey, was appointed clerk of the works at a salary of £2 10s.

The fiftieth annual report of the Governors of the Peabody Donation Fund states that the surplus income for the year 1914 from rents and interest was £45,590 13s. 11d., this return being 2.48 per cent. on the capital of the Fund at January 1, 1914, against 2.07 per cent. the previous year. The total fund on December 31, 1914, was £1,880,624 14s. 4d. At the end of the year the Governors had provided for the artisan and labouring poor of London 15,342 rooms, including those occupied by the superintendents and porters, besides laundries and lavatories. These rooms comprised 6,438

separate dwellings—viz., 300 cottages of five rooms, 22 tenements of five rooms (superintendent's quarters), 201 tenements of four rooms, 2,099 of three rooms, 2,756 of two rooms, 1,049 of one room, and nine shops with 61 rooms attached. The average weekly earnings of the head of each family in residence at the close of the year was £1 1s. 9d. for block tenements, and £1 14s. 6d. for cottages. The average weekly charge—including the weekly proportion of rates—of each tenement (excluding cottages) was 5s. 3d. a week, and of each room 2s. 4d. The mean population during the year was 22,290.

The "Empire Number" of our Canadian contemporary, the *Contract Record*, is an excellent issue. Those here who talk about bad times in the Dominion will grow less pessimistic after its perusal, full from cover to cover as it is of evidence of activities in all directions, and of the pluck and wisdom with which Canadians everywhere are keeping the flag flying. Nearly two hundred and fifty pages of matter testify throughout to the grip our contemporary has on all the industries of which it is the exponent, and on behalf of which it adopts as its motto the inspiring utterance of Sir Robert Borden, the Premier: "I Stand in the First Place for the Empire as Against the World; and, Within the Empire, I Stand First for Canada."

The sixty-sixth annual report of the Prudential Assurance Company for the year ending 31st December, 1914, states that the number of ordinary policies issued during the year was 65,751 assuring the sum of £6,318,843, and producing a new annual premium income of £424,353. The premiums received during the year were £5,035,625, being an increase of £115,107 over the year 1913. In addition, £10,315 was received in premiums under the sickness insurance tables. In the industrial branch the premiums received during the year were £8,176,202, being an increase of £301,746. The total number of policies in force in this branch at the end of the year was 20,085,010; their average duration exceeds thirteen years. The assets of the company, in both branches, as shown in the balance-sheet, are £91,202,344, being an increase of £4,209,341 over those of 1913. The valuation has been made by Mr. Joseph Burn. In the ordinary branch the surplus shown is £1,794,953, including the sum of £153,230 brought forward from last year. Out of this surplus the directors have added £500,000 to the investments reserve fund, which stands as at 31st December, 1914, at £1,000,000. In the industrial branch the surplus shown is £1,542,722, including the sum of £306,521 brought forward from last year. Out of this surplus the directors have added £250,000 to the investments reserve fund, which stands as at 31st December, 1914, at £750,000. The directors have also carried £300,000 to a special reserve to meet contingent liabilities created by the Courts (Emergency Powers) Act. The total surplus of the two branches, as shown by the valuation, is thus £3,337,675. In the ordinary branch a reversionary bonus at the rate of £1 10s. per cent. on the original sums assured has been added to all classes of participating policies issued since the year 1876. In the industrial branch a bonus addition will be made to the sums assured on policies of over five years' duration which become claims either by death or maturity of endowment from the 5th of March, 1915, to the 2nd of March, 1916, both dates inclusive, ranging from £2 10s. to £0 per cent.

The Brigg Rural District Council have decided to apply for power to borrow £4,824 for the erection of artisan dwellings at Goxhill and South Killingholme.

At the meeting of the St. Austell Rural District Council on Friday a letter was read from the county surveyor stating that the new road to Mevagissey would be 2,770 yards in length, and would cost £12,000. With regard to the maining of the road to St. Dennis, that would cost £7,186. The Road Board would make a grant of one half, and lend the other half free of interest for five years.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Town Planning Institution. "Some of the Larger Problems of Town Planning," by Thomas H. Mawson, 82, Victoria-street, S.W. 8 p.m.
Glasgow Architectural Craftsmen's Society. "English Renaissance Furniture," by John Edmie. 8 p.m.
MONDAY.—Victoria and Albert Museum. "Spanish Medieval Architecture," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.
Royal Institute of British Architects. "English Monuments," by James Williams. 8 p.m.
Royal Society of Arts. "House Building: Past and Present," Cantor Lecture No. 1, by M. H. Baillie Scott. 8 p.m.
WEDNESDAY.—Royal Society of Arts. "The Industrial Uses of Coal Gas," by H. M. Thornton. 8 p.m.
Manchester Society of Architects. "Some Aspects of Romanesque Architecture," by Professor A. O. Dickie, M.A., A.R.I.B.A. 16, St. Mary's Parsonage, Manchester. 6.30 p.m.
THURSDAY.—British Museum. "Santa Sophia, Constantinople," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.
Royal Society of Arts. "The Indian Army," by Lieut.-Col. A. O. Yate. 4.30 p.m.

FOR

Olivers' Seasoned Hardwoods,

TO—

WM. OLIVER & SONS, Ltd.,
120, Bunhill Row, London, E.C.

TENDERS.

* Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ABERTRIDWR.—For improvements at the Abertridwr council school, for the Glamorgan County Council:—

Williams, J., Abertridwr, near Cardiff (accepted) ... £190 0 0

ANGMERING.—For the erection of cottages, for the East Preston Rural District Council:—

Harris, E. A., Angmering ... £744 0 0
(Accepted.)

BATTERSEA, S.W.—For the proved of (a) Empire Meters and (b) Imperial Meters at the Battersea works of the Metropolitan Water Board. Accepted tenders:—

(a) Empire Meters:—
Material Meter Co. ... £1,037 10 0

(b) Imperial Meters:—
Beck and Co., Ltd. ... £630 0 0

BISHOP AUCLAND.—For the extension of the cemetery at Bishop Auckland, for the Bishop Auckland Joint Burials Committee. Mr. D. Crawford, Bishop Auckland, architect and surveyor:—

Manners, T. ... £1,239 0 0

Douglas, J. T., and Son ... 1,073 15 0

Bunch, C. S., Newcastle-on-Tyne ... 1,077 3 4

Hudson, W. ... 951 4 2

Barron, W., and Son, Ltd., Derby ... 841 18 4

Hilton, J., and Sons, Ltd. ... 722 4 7
* Accepted. Rest of Bishop Auckland.

DARLSTON.—For the construction of stoneware pipe sewers, manholes, cast-iron pipes, tanks, and filters, for the Darlston Urban District Council. Messrs. Dodd and Dodd, M.M.I.C.E., County Chambers, Corporation-street, Birmingham, engineers:—

Currall, Lewis, and Martin, Birmingham ... £21,558 0 0

Holloway, H., Wolverhampton ... 20,203 0 0

Johnson and Langley, Leicester ... 16,941 0 0

Ireland, E., Bath ... 15,426 0 0

Hill, A., and Co., Kidderminster ... 15,275 0 0

Shardlow, J. J., Leicester ... 15,012 0 0

Elvins, T., and Co., Birmingham ... 14,870 0 0

Bell and Sons, Manchester ... 14,038 0 0

Boswell & Co., Wolverhampton ... 13,800 0 0

Childs and Withers, Worcester ... 13,076 0 0
* Accepted.

DUNSTABLE.—For alterations and additions to the Green Man public-house, Chalk-hill, for the corporation:—

Higgs, H., High-street North ... £1,005 6 6
(Accepted.)

LONDON.—For the supply of Guernsey granite setts during the next twelve months, for the London County Council, at per ton:—

	A.	B.	C.	D.	E.	F.	G.	H.	Total tender.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	£ s. d.
Mowlem, J., and Co., Ltd., Westminster—	46 0	47 6	45 6	44 6	42 6	42 0	41 0	42 0	17,871 5 0
Fry Bros, Ltd., Greenwich—	42 6	46 0	42 6	42 6	39 6	39 6	39 6	39 9	16,792 10 0
Brookes, Ltd., Westminster—	41 6	44 0	40 6	40 6	38 6	37 6	37 6	37 6	16,175 0 0
Griffiths, W., and Co., Ltd., Bishopsgate—	40 3	43 10	41 0	41 3	37 3	38 0	38 3	38 3	16,057 5 10
Manuelle, A., and F., Bishopsgate—	40 0	43 6	40 0	40 0	37 0	37 0	37 0	37 0	15,802 10 0
The Enderby and Stoney Stanton Granite Co., Ltd., Enderby—	38 10	38 4	39 10	38 10	36 4	37 4	36 4	36 4	15,242 18 4
A.—3,000 tons 3in. by 6in. B.—1,000 tons 3in. by 6in. C.—1,250 tons 3in. by 6in. D.—1,500 tons 3in. by 6in. E.—500 tons 4in. by 6in. F.—200 tons 4in. by 6in. G.—250 tons 4in. by 6in. H.—300 tons 4in. by 6in.									

* Accepted for half the quantities tendered for, delivery to be spread over a period of six months instead of twelve months.

EDMONTON.—For erecting an additional story over the boardroom block and alterations to the same, for the guardians:—
Woollaston and Co., Limehouse £2,422 0 0
(Accepted.)

EGHAM.—For the erection of a secondary school for boys at Egham, for the Surrey Education Committee:—
Watson, W., Ascot (accepted) ... £9,694 0 0

FINDOCHTY.—For works in connection with water supply at Findochty, for the Banffshire County Council:—
Clark and Chapman, Aberdeen £1,993 0 0
(Accepted.)

FULFORD.—For making roadways and footpaths, &c., on the new burial ground at Fulford, for the Fulford Water Board:—
Bell, G., and Sons, Ltd.,
Manchester ... £411 15 5
Treasure, E. J., York ... 235 10 0
Birch, W., and Son, Ltd., York ... 232 10 0
Kershaw, H. M., Keighley ... 197 9 4
Martin, C., York (accepted) ... 181 16 2

GOOLE.—For erecting coal carbonising plant on the site of the present gasworks, for the urban district council. Mr. Fazakerley, gas manager:—
Leach, Goodall, & Co., Leeds
(accepted) about ... £12,000 0 0

HAMPTON.—For the supply of granite setts required in connection with coal unloading plant by the Metropolitan Water Board:—
Midland Quarry Co., Ltd. ... £117 0 0
(Accepted.)

LONDON, N.—For underpinning work at the school, Hornsey-road, for the guardians of the poor of St. Mary, Islington, N. Mr. Edmund J. Harrison, 9, Gray's Inn-square, W.C., architect:—

Shillitoe, Thos. ... £224 0 0

Pitcher, I. R., and Son ... 218 0 0

Smith and Co. ... 186 6 0

Powers, J. J. ... 177 2 2

Mather, J. C. ... 177 0 0

Stevens and Sons ... 175 0 0

Killingback, C. W., and Co. ... 173 18 1

Lever, T. B., and Co. ... 168 4 11

Bate Bros. ... 167 11 5

Sharpin, W. S. ... 162 0 0

Lea, H., and E. ... 153 0 0

Lown, L., and Co., Hol'way* ... 152 1 0
* Accepted.

PEBWORTH.—For the erection of a dwelling house at Pebworth, Glos., for Mr. Thos. Smith, Messrs. Knight and Hebery, 5, Rother-street, Stratford-on-Avon, architects:—

Franklin, Ltd., Deddington
Oxon ... £105 0 0

Crisp, H. N., Bretforton ... 439 10 0

Smith and Unett ... 390 0 0

Matthews and Mullis ... 380 19 2

Chivers, F. (accepted) ... 380 8 11
(Rest of Stratford-on-Avon.)

TOWCESTER.—For erecting refreshment-rooms, for the Stratford M.J. Railway Co. Messrs. Knight and Hebery, 5, Rother-street, Stratford-on-Avon, architects. Quantities by architects:—

Smith and Unett, Stratford-on-Avon ... £339 0 0

Franklin, Ltd., Deddington, Oxon ... 298 0 0

Kenet, T., Eydon, Byfield ... 294 10 0

Hawkin, A. P., Northampton ... 290 0 0

Ratledge, D., Weedon ... 262 13 0

Matthews and Mullis, Stratford-on-Avon ... 242 9 10

Chivers, F., Stratford-on-Avon* ... 230 6 6
* Accepted. Further additions have been made, increasing this tender to £303 13s. 6d.

WANDSWORTH.—For the supply of furniture for the married quarters at the St. James's-road branch institution, for the Wandsworth Board of Guardians:—

Arding and Hobbs, Clapham Junction (accepted) ... £63 3 4

WEXFORD.—For the erection of 17 workmen's houses in Westgate and Hill-street, for the corporation:—

Browne, J. ... £3,512 0 0

O'Connor, Mrs. ... 3,507 0 0

Redmond, Aiden (accepted) ... 3,043 4 1

WHITCHURCH.—For the erection of a council school for 250 scholars at Whitchurch, near Cardiff, for the Glamorgan County Council. Mr. D. Pugh-Jones, F.S.I., Cardiff, county architect:—

Watts and Gale, Africa-gardens, Cardiff (accepted) ... £2,890 0 0

WILLESDEN.—For the renewal of high-tension switchboard at Salusbury-road substation, for the electricity committee:—

British Thomson-Houston Co., Ltd., Rugby ... £665 0 0
(Recommended for acceptance.)

TIMBER.

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STATED

BRICKS.

(All prices net.)

3 1/8"	Accrington Best Red Plastic Facing	per 1,000	00
Bricks	.....	£2	10 0
3 1/8"	ditto Second Best Plastic ditto	.....	2 6
	Ditto Ordinary Secondary Bricks	.....	1 11
	Ditto Plastic Engineering Bricks	.....	1 17 6
	Sewer Arch Brick not more than 3 1/8 in thick part	.....	2 0 0
3 1/8"	Chimney Bricks fit for outside work	...	2 6 0
3 1/8"	ditto ditto through	.....	2 0 0
3 1/8"	Beaded, Ovolo and Bevel Jamb; Stock patterns	.....	3 7 6
Accrington	Air Bricks, 9" x course deep, each	.....	0 0 6
	ditto 9" x 1 course	.....	0 0 3
Accrington Camber Arches:—			
3	course deep, 4 1/2" soffit, per foot opening...	.....	0 1 3
4	ditto 4 1/2" ditto ditto ditto	.....	0 1 8
5	ditto 4 1/2" ditto ditto ditto	.....	0 2 1
6	ditto 4 1/2" ditto ditto ditto	.....	0 2 6
3	ditto 9" ditto ditto ditto	.....	0 2 1
4	ditto 9" ditto ditto ditto	.....	0 2 11
5	ditto 9" ditto ditto ditto	.....	0 3 6
6	ditto 9" ditto ditto ditto	.....	0 4 6

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

MOULDED BRICKS.

* These prices are carriage paid in full truck loads to London Stations.	
Thames Sand	7 6 per yard, delivered
Pit Sand	7 0 "
Thames Ballast	6 0 "

STONE.*

Bath Stone, delivered on road	£	s.	d.
Waggons, Paddington Depot per foot cube	0	1	7 1/2
Ditto, ditto, Nine Elms Depot	"	0	1 7/8
Beer Stone, delivered on rail	"	"	"
at Seaton Station.....	"	0	1 1
Ditto, delivered at Nine Elms	"	"	"
Station	"	0	1 7/8
Portland Stone, in random blocks of 20ft. average:-			
Delivered on road waggons	Brown	White	
at Paddington Depot, {	White Bed.	Base Bed.	
Nine Elms Depot, or {	Per foot cube		
Pimlico Wharf	£0 2 3	...£0 2 4 1/2	

TILES.

OILS.

GLASS (IN CRATES).

VARNISHES. &c. Per gallon

Fine Pale Oak Varnish	\$0	8	0
Fine Copal Oak	0	10	6
Superfine Pale Elm or Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of churches.....	0	14	6
Fine Elastic Carriage	0	12	9
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	0
Extra Fine French Oil	1	1	0
Eggshell Flating Varnish	1	18	9
White Copal Enamel	1	12	9
Extra Pale Paper	1	12	0
Best Japan Gold Size	0	10	0
Best Macassar Gold Size	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knottling.....	0	10	0
French and Brush Polish.....	0	10	0

TRADE NOTES.

From frequent reports received, there is a growing tendency to make flat roofs in concrete. Many of these are, we notice, made watertight with a rendering of Pudo and cement. A large flat erected at Blackpool (Shaw's Depository) was finished about nine months ago, and we understand that both contractor and architect consider the Pudloed treatment a great success.

A new reredos will be set up in the parish church of Scarborough before Easter. It is provided for by the gift of the late Mr. Nesfield. A parishioner is presenting carved-oak altar-rails "in memoriam."

* All F.O.B. London.

LIST OF COMPETITIONS OPEN.

Mar. 30—Water-Supply Scheme, Chew Marina	£100, £50	J. S. Dury, Clerk to Clutton R.D.C., Temple Cloud, Bristol.
April 21—Laying Out Coach-road and the Erection of Houses, Whitehaven	30gs., 20gs., 10gs.	T. Brown, Town Clerk, Town Hall, Whitehaven.
No date—Municipal Buildings, Stepney (Mr. Henry T. Hare, F.R.I.B.A., Assessor)		G. W. Clare, Town Clerk, 15, Great Alie-st., Whitechapel, E.
do. —Small Hospital, Galemire		E. B. Croasdel, Clerk, Union Hall, Whitehaven.
do. —Designs for Cottages, Bromborough Estate, Architects in Practice only. Cost not more than £1,000 per group of Five, and £1,100 per group of seven. (Mr. Geoffrey Lucas, F.R.I.B.A., Assessor)	Nine premiums of 2½ p.c. per group	Lever Brothers, Ltd., Port Sunlight, Cheshire.

LIST OF TENDERS OPEN.

BUILDINGS.		
Mar. 12—Works and Repairs (Year), Duke of York School, Dover	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
12—Schools (400 places), Rood End, Oldbury	Education Committee	A. Long, Archt., New-street, West Bromwich.
12—Works and Repairs (One Year), Bristol District	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
12—Workhouse, Alterations to, Smallburgh	Guardians	F. Davies, Clerk, North Walsham.
12—Works and Repairs (One Year), Leeds District	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
12—Shedding, Extension of, Fold Head, Mirfield	Urban District Council	Edward Gill, Eng., Council Offices, Mirfield.
12—Chimney (90ft. high), Public Baths, Macclesfield	Baths Committee	S. C. Baggott, Boro' Sur., Macclesfield.
13—Council School, Hambridge	Somerset Education Committee	Samson and Colthurst, 1, Hammet-street, Taunton.
13—Buildings, High-street and Lossie Wynd, Elgin	Guardians	J. Witter, Archt., Elgin.
13—Restoration after Fire at Workhouse, Helston	Rural District Council	A. E. Ratcliffe, Clerk, Union Offices, Cross-street, Helston.
13—Labourers' Single Cottages (28), Gorey	I.W. Joint Hospital Board	B. W. Webster, Archt., Gorey.
13—Cubicle Ward Block at Hospital, Fairlee	Urban District Council	S. R. Cocks, 5, St. Thomas-street, Ryde.
15—Houses and Shops, Bolton-on-Dearne	Corporation	Garside and Pennington, Archts., Ropergate, Pontefract.
15—Cottages (20), Hollowell, Northampton	Tredegar Urban District Council	H. Hankinson, Town Clerk, Guildhall, Northampton.
15—Caretaker's Lodge at Cemetery, Cefn Golen	Rowley Regis Education Authority	W. Lloyd Roach, Sur., Bedwely House, Tredegar.
15—Technical School, Wright's-lane, Old Hill	Palladium Co.	Pritchard and Pritchard, Kidderminster.
15—Picture House and Shops, Pontypridd	East Suffolk County Council	Thomas and Morgan, Archts., Pontypridd.
15—Warehouse, Hangingroyd-road, Hebden Bridge	Parish Council	Sutcliffe and Sutcliffe, Archts., New Road, Hebden Bridge.
16—Tuberculosis Hospital, Normanston, Lowestoft	Holland County Council	H. M. Cautley, A.R.I.B.A., The Thoroughfare, Ipswich.
16—Coal Store, Gasworks, Morley	Hampshire County Council	F. Turner, B.Sc., Boro' Eng., Town Hall, Morley.
16—Public Offices, Hornchurch	Tramway Committee	W. C. Allen, Clerk, Council Offices, Hornchurch.
17—Buildings, Ireland's Farm, Freiston	A. G. Macdonald	E. J. A. Christie, County Land Agent, Boston, Lincs.
17—Council School (353 places), Andover	Holland County Council	A. L. Roberts, Archt., The Castle, Winchester.
17—Storage Shed, Tramway Depot, Longroyd Bridge	Henry Cullingworth and Sons	K. F. Campbell, M.I.C.E., 1, Peel-street, Huddersfield.
17—Premises at 22, Market-street, Lurgan	Markets Committee	Hobart & Heron, Archts., Scottish Provident Bldgs., Belfast.
17—Buildings, Whitelock Hall Farm, Freiston	Corporation	E. J. A. Christie, County Land Agent, Boston, Lincs.
17—Warehouse, South-street, Dewsbury	Glasgow School Board	Kirk, Sons, and Ridgway, Archts., Market-place, Dewsbury.
17—Verandah to Shops, Market Hall, Halifax	Corporation	J. Lord, M.I.C.E., Boro' Eng., Town Hall, Halifax.
18—Workshop and Men's Room, Wallasey	Corporation	J. H. Crowther, Eng., Limekiln-lane, Wallasey.
18—Albert Higher-Grade School, Springsburn	Corporation	The Master of Works Dept., 129, Bath-street, Glasgow.
18—Shed at W.D.S. Pumping Station, Penarth-road, Cardiff	H.M. Works Commissioners	The City Engineer, City Hall, Cardiff.
18—Electric Power Station, Additions to, Darlington	H.M. Works Commissioners	G. Winter, Boro' Sur., Town Hall, Darlington.
19—Works & Repairs (Year), Hampton Court & Richmond	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
19—Works and Repairs (One Year), Newcastle-on-Tyne	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
19—Works and Repairs (One Year), Leicester	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
20—Children's Home, Ovenden, Halifax	Guardians	Clement Williams and Sons, Archts., Commercial-st., Halifax.
20—Two Lock-up Sheds & Premises, Pontypool-rd, Crumlin	Mrs. George Jones	E. D. T. Jenkins, Archt., Station Chambers, Crumlin, Mon.
20—Two Cottages, Outfall Works, Hendon	Urban District Council	G. Hornblower, 2, Devonshire-terrace, Portland Place, W.
22—Eight Cottages, Stevenage	Urban District Council	W. Onslow Times, Clerk, Council Offices, Stevenage.
22—Engine House at Waterworks, Chelmsford	Town Council	P. T. Harrison, A.M.I.C.E., Mun. Offices, Chelmsford.
22—Engine Foundations, &c., Pembury	Tunbridge Wells Corporation	W. Maxwell, A.M.I.C.E., Waterworks Eng., Tunbridge Wells.
22—New Map Store, Ordnance Survey Offices, Southampton	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
22—Post Office, Extension of, Dumfries	H.M. Works Commissioners	H.M. Office of Works, 3, Parliament-square, Edinburgh.
22—Domestic Arts Centre, Garnfach, Nantyglo	Monmouthshire Education Com	J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.
22—Extending Waunniago, Mental Hospital, Carmarthen	Visitors Committee	G. Morgan and Son, Archts., 24, King-street, Carmarthen.
23—Cottages (10), Canons-lane, Banstead	Epsom Rural District Council	A. C. Williams, Archt., Gynsdales, Waterloo-road, Epsom.
23—Houses (42), Western-road, Southall	Urban District Council	E. Brown, M.I.C.E., Town Hall, Southall.
23—Labourers' Single Cottages (21), Dromore West	Rural District Council	H. Naughton, Clerk, Dromore, Ireland.
23—Houses (12), Norwood-road, Southall	Urban District Council	E. Brown, M.I.C.E., Town Hall, Southall.
24—Hospital Block, Withington, Manchester	Guardians	F. H. Overmann, F.M.S.A., 49, King-street, Manchester.
24—Baths, Barlow-road, Levenshulme, Manchester	Baths Committee	The City Architect, Town Hall, Manchester.
24—Dispensary at Moycullen, Galway	Guardians	A. Macdonald, Archt., St. Francis-street, Galway.
24—Converting Shed into Carriage Repair Shop, Bury	Lincolnshire & Yorkshire Ry. Co.	The Engineer's Office, Hunt's Bank, Manchester.
27—Public Elementary School (194 places), Thundersley	Essex Education Committee	G. Topham Forrest, County Archt., 79, Duke-st., Chelmsford.
27—Three Cottages, Surfleet	Spalding Rural District Council	Davis and Crowley, Archts., 6, Double-street, Spalding.
29—Grammar School, Extension of, Bridlington	Carmarthenshire County Council	J. Bilson, Archt., 23, Parliament-street, Hull.
31—Council School (250 places), Penryn	Anglesey Education Committee	W. V. Morgan, A.R.I.B.A., County Architect, Carmarthen.
31—Training College, Cookery Room at, Dublin	Anglesey Education Committee	J. F. Fuller, Archt., 179, Great Brunswick-street, Dublin.
April 7—Council School, Llandfrydog	Anglesey Education Committee	J. Owen, F.R.I.B.A., County Archt., Menai Bridge.
7—Council School, Ty Mawr	Anglesey Education Committee	J. Owen, F.R.I.B.A., County Archt., Menai Bridge.
7—Council School, Additions to, Pentraeth	Anglesey Education Committee	J. Owen, F.R.I.B.A., County Archt., Menai Bridge.
7—Council School, Additions to, Llanfachreth	Anglesey Education Committee	J. Owen, F.R.I.B.A., County Archt., Menai Bridge.
7—Council School, Additions to, Llangoch, Holyhead	Anglesey Education Committee	J. Owen, F.R.I.B.A., County Archt., Menai Bridge.
7—Council School, Additions to, Llychlyed, Brynwgwan	Anglesey Education Committee	J. Owen, F.R.I.B.A., County Archt., Menai Bridge.
No date—Kirkdale Homes, Plastering and Cementing, Liverpool	Select Vestry	G. W. Coster, Clerk, Parish Offices, Brownlow-hill, Liverpool.
do. —Detached House, Holme-on-Spalding Moor	Tabernacle Con. Church Com.	A. Firth, Hyde Park-road, Halifax.
do. —Rising, Cwmgorse, Gwanacsgurwen	Select Vestry	G. Thomas, Archt., Tyddi House, Cwmgorse, Glam.
do. —Raising Valuer's Office, Alterations to, Liverpool		G. W. Coster, Clerk, Parish Offices, Brownlow-hill, Liverpool.
do. —Five Cottages and Steadings, Loanhead		H. M. Conacher, Sec., 29, St. Andrew-square, Edinburgh.
do. —Warehouse, Bective Mills, Alverthorpe	Harpar Bros.	J. Young and Co., Archts., 62, Market-street, Bradford.
do. —Transit Shed, Victoria Wharves, Plymouth	Victoria Wharves, Ltd.	W. Wrigley, A.R.I.B.A., 2, King-street, Wakefield.
do. —Shed, Idle road, Bradford	Gas Co.	Prigg and Lindon, Civil Engineers, Millbay, Plymouth.
do. —House, Ings-lane, Castleford		H. E. Priestley, Archt., Bertram-rd., Manningham, Bradford.
do. —Farmhouse, Alterations to, Corbets Tey		J. P. Padgett, Archt., Carlton Chambers, Castleford.
do. —Offices, Alterations to, Plymouth	Victoria Wharves, Ltd.	J. W. Stevens, Archt., 181, Queen Victoria-street, E.C.
		Prigg and Lindon, Civil Engineers, Millbay, Plymouth.

ELECTRICAL PLANT.

Mar. 16—Electricity Meters and Cable Stores, Hornsey	Town Council	The Borough Electrical Engineer, Tottenham-lane, Hornsey
16—Electrical Plant, Brisbane	Electricity and Tramways Com	The Deputy Postmaster-General, Brisbane.
16—Motors, Cables, and Transformers, Warrington	Urban District Council	F. V. L. Mathias, M.I.E.E., Howley, Warrington.
19—Cables and Joint Boxes (One Year), Swinton	Municipal Electric Works	H. C. Busbridge, Elec. Eng., Swinton, Lancs.
25—High and Low-tension Cables, Christiania	Corporation	Elektricitetsverket Expeditionskontor, Christiania.
26—Turbine, Leighton-road, Hove	Corporation	C. B. Smith, M.I.E.E., Electricity Works, Hove.
26—Accumulators, Leighton-road, Hove	Corporation	C. B. Smith, M.I.E.E., Electricity Works, Hove.
April 9—Telegraph Cable connecting Cadiz & Tenerife, Spain		Registro General de Telegrafos, Calle de Carretas, Madrid.

ENGINEERING.

Mar. 13—Destructor, Bradford	Corporation	The City Architect, Town Hall, Bradford.
15—Rhydymaerdy Bridge, Pantyffynon, Annanford	Llandiloafar R.D.C.	E. Jones, Sur., Glancennan, Llandebie.
16—Kitchen Apparatus at School, West Norwood, S.E.	Lambeth Guardians	J. L. Goldspink, Clerk, Brook-street, Kennington-road, S.E.
16—Two Vertical Compound Steam-Engines, N. Woolwich	London County Council	The Chief Engineer, County Hall, Spring Gardens, S.W.
16—Culvert over Small Hope Burn, Lanchester	North Eastern Railway	C. F. Bengough, Eng., York.
16—Reconstructing Uphill Drive Bridge, Weston-super-Mare	Great Western Railway Co.	A. E. Bolter, Sec., Paddington Station, W.
16—Gasholder, New Mills	Urban District Council	The Gas Engineer, New Mills.
16—Motor Pumps, Glasgow	Corporation	W. Waddell, Chief Officer, Fire Brigade, Ingram-st., Glasgow
16—Water Heater, Dulwich Baths, Goose Green, S.E.	Camberwell Borough Council	W. Oxtoby, Boro' Eng., Town Hall, Camberwell, S.E.
16—Water Softening Plant at School, West Norwood, S.E.	Lambeth Guardians	J. L. Goldspink, Clerk, Brook-street, Kennington-road, S.E.
17—Deep Borehole at Utkinton, near Tarporley, Northwich	Urban District Council	J. Newton, Son, & Bailey, Engrs., 19, Cooper-st., Manchester.
17—Pumping Installation, Admiral's Park, Chelmsford	Town Council	P. T. Harrison, A.M.I.C.E., Municipal Offices, Chelmsford.
17—Washing Machine, Parc Gwyllt Asylum, near Bridgend	Asylum Visiting Committee	W. E. R. Allen, Clerk, Glamorgan County Hall, Cardiff.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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THE QUANTITY SYSTEM OF ESTIMATING.

AN AMERICAN METHOD COMPARED WITH THE LONDON SYSTEM.

By ALBERT G. DUKE

(Of the Aberthaw Construction Co., Boston, U.S.A.)

It would seem to any American contractor that the London system of quantity surveying requires too much preliminary work, especially in these days when the contractor is left so little time to prepare an estimate; and the fine detail is not required or worth the time spent upon it. We have no recognised method of taking off quantities in this country, and until the profession is established, it must be left to each contractor to develop his own method.

It is the writer's intention to explain and show briefly a method of taking off quantities and estimating, so that the advantage of the method now advocated may be seen by comparing the two systems. This system of "taking off" is the one used by the Aberthaw Construction Company, of Boston, Mass. It has been used by them for the past seven years, and has proved entirely satisfactory in every way, being equally applicable to large and small works of any character.

The reader will notice at a glance that the chief labour-saving item is the fact that all the work appears on one set of sheets, whereas the London system requires three sets of records—viz., the "Dimensions," the "Abstract" and the "Bill." In the Aberthaw method, it is important to notice the systematic order of setting down the dimensions, and that each column is issued for a specific purpose, so that when it is necessary to refer to the dimensions later, or variations are to be made, the items can be easily identified.

The first column on the left is for the description and location of the work, also for any notes useful for further reference. The third is for length, fourth for breadth, the fifth is for height, while the second is used for setting down the number of floors, footings, or other items by which the measurements should be multiplied. As the figures are connected by multiplication signs, the clerk who extends them has a simple arithmetical expression to extend, with very little chance for any misunderstanding. The remaining columns are for extensions, unit prices, and total money, respectively. The right use of these columns is very important, and if it is faithfully followed out it will be perfectly easy for any person to refer and identify a

ESTIMATE FOR ONE-ROOM BRICK BUILDING, FEBRUARY 12, 1915.

Concrete to foundations	2 x (14½ + 10)	x 1½ x	1	81	=	3cu yds.	6.00	18
6in. concrete paving, with lin. granolithic finish	12	x 10		120		120sq.ft.	.15	18
Brickwork in cement mortar	2 x (13½ + 10)	x ½ x	14	436				
Windows	1 x 3	x ½ x	1	ddt. 32		46 ddt.		
Door	3	x ½ x	7	ddt. 14		390 = 390cu.ft.	.50	195
Clear site and grade for paving								5
Dig trench, wheel, and deposit	2 x (13½ + 10)	x 3 x	5	700	=	26cu.yds.	1.25	33
Backfill	46	x 2 x	1	368	=	18cu.yds.	.50	7
Mason work—								
6in. by 6in. stone window sills	1 x 1 f. 1.					16 f. 1.	1.00	16
10in. by 6in. stone threshold to door	4 f. 1.					4 f. 1.	1.50	6
Carpenter work—								
Boxed frames, 3ft. by 4ft., double hung	sash and glazi	ng with clear sheet glass.	++ 1				5.00	20
Labour, setting, and jointing			++ 1				2.00	8
Trim			++ 4				2.00	8
2in. door and frame (4 panel), and								
trim, 3ft. 6in. by 7ft. 6in.							15.00	15
Labour, setting, and hanging							5.00	5
Hardware to windows and doors								10
lin. by 6in. baseboard	2 x (10 + 12)					44 f. 1.	.20	9
Rafters, 6in. by 2in.	13 x 14	=	182	242				
Plates and sundries				150		390 say 400 b. f.	45.00	18
lin. tongued & grooved roof boarding	2 x 16'	x 14'		224	=	2½sq. 60 f. 1.	4.50	10
Trim to eaves	2 x (16 + 14)						.20	12
Plastering—								
Walls, three-coat work	2 x (10 + 12)	x 9		396		396		
Windows	1 x 3	x 4		ddt. 49		69 ddt.		
Door	3	x 7		ddt. 21		327 = 36½sq.yds.	1.00	36
Lath and plaster to underside of ceiling	12	x 10		120		13½sq.yds.	1.50	17
Painting, three-coat work—								
Door	2 x 1	x 8		64		8sq.ft.		
Windows	2 x 1 x 3	x ½		126		430 = 48sq.yds.	.30	15
Eaves	60	x ½		240				
Cold-water paint walls and ceiling (take plastering measurements) ...	36½	x 13½sq.yd.				50sq.yds.	.05	3
Ready roofing	16	x 1½		224		2½sq.	4.00	9
Total net cost								\$493
Contractor's profit ..							15	74
Contingencies and sundries								50
Total								\$617

dimension at any time after it has been made.

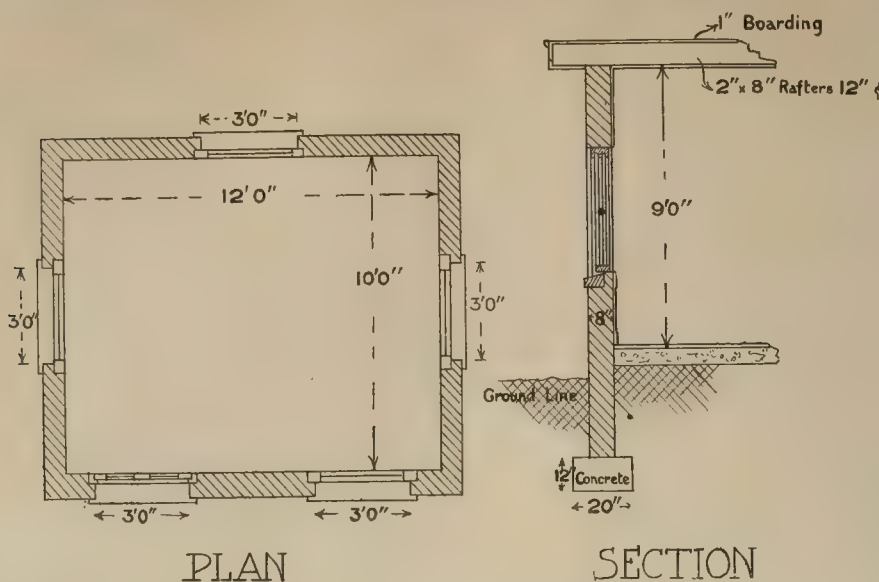
One man should scale the whole of the building, another extend the dimensions, and the same one who scales should check the extensions after he has taken off all dimensions. This makes two distinct operations and leaves the estimator's mind clear for scaling. Each trade or operation is taken in turn, taking every item throughout the building before proceeding with the next operation. Assuming a brick building, the estimator would commence with the brickwork foundations and continue until all work taken care of by the Bricklayer is taken, before commencing with any other trade. The same applies to the Earthwork—clearing site, digging, backfill, any pumping, sheeting, etc., would be entered under this heading. All trades to be treated in the same way.

It is essential, in order to avoid omissions or errors, to follow a regular order of "taking off" the work, and the main items should always be taken first. For instance, assuming certain contractor's

chief work is brickwork, it would be as well always on every estimate to commence with this item, then follow with concrete, excavation, drains, windows, carpentry, doors, roofing, painting, glazing, miscellaneous iron work, etc., etc. In general the work should be "taken off" in the same order as the job is constructed. The method of booking a dimension, cubic, superficial, lineal, or number should be followed according to the prevailing method of pricing or purchasing material.

The letters "Ddt" after a dimension denote that the item is to be deducted, the extension being put a little to the left so that it may readily be seen. It will be noticed that fractions are used for parts of a foot because the dimension is easily understood, and there is not the chance of mistaking the position of a decimal point that so frequently occurs when decimals are used.

All quantities should be taken off first, and then the unit prices set down in the column provided. No extensions should be made until this has been done.



PLAN

SECTION

It would be a great waste of time to take off the excavation as minutely as is done by the London system, and it is not advisable to use the peculiar English unit of the rod for brickwork.

THE NATIONAL PORTRAIT SOCIETY.

There are not a few really good portraits at this exhibition at the Grosvenor Gallery; there are a good many which hardly seem to come under the designation—as, for instance, Mr. Augustus E. John's "Two Disciples" (98), or Mr. Strang's "Mirror" (70), or his "Red Fez" (97). We mention these because, in some respects, they do not lack an interest which we fail to find in some other attempts on similar lines.

Among the best of the rest we like Miss Edyth Rackham's Portrait of a Woman (68), wondering all the same why the subject is wrapped in a haze. Of Mr. Walter Bayes's two works, we prefer his "Alexander at Four" (83) to his "K.B. in Red" (128). "Maria Carmi" (78), by Mr. J. Lavery, A.R.A., is one of the best works in the large gallery. Another is Mr. Walter Sickert's Portrait of a Man (87). Mr. Waldo Murray's portrait of Mrs. Waldo Murray (94) is good, and so are the two portraits by Mr. Louis Sargent (107 and 123). The Portrait of a Lady, by Mr. Charles Shannon, A.R.A. (109), and the three portraits by Mr. Fiddes Watt, A.R.S.A. (129, 135, and 140), are excellent, the last-named, that of the Dean of Rochester, especially. Mr. John Lavery, A.R.A., also shows one of Lord Edward Grosvenor (148).

Some of the sculpture is well above the average. Mr. Rik Wouters, who sends eight works, easily heads the list as regards quality as well as quantity. We like his bronzes best, particularly 112, 113, and 115; but he is evidently equally at home with plaster, as witness his bust of Mr. M. J. Enser (156). A plaster bust of the late Mr. A. Chichele Plowden (12) is good, and so is the bronze bust portrait of Mr. George Munne (81).

THE REPORT OF THE LAND ENQUIRY COMMITTEE: RATING.*

By ISAAC DIXON (Fellow).

(Concluded from page 265.)

THE PROPOSAL TO TRANSFER THE WHOLE OF RATES TO SITE VALUE.

After criticising the present system of rating and its results, the Committee discuss

* Read at the Ordinary General Meeting of the Surveyors' Institution, held on Monday, Feb. 22, 1915.

the proposal for transferring the whole of local rates to site value. They express the opinion that such a transference would "undoubtedly increase production and promote the best use of land, while giving a stimulus to the whole trade and industry of the country, in so far as they are dependent on the application to land of labour and capital." Almost immediately afterwards the Committee state a number of objections to this scheme, the first being that the rating of site values would discourage industry, and in particular agriculture, and they quote some instances which have been put before them showing conclusively that the rates on agricultural land would be very much greater than at present, if not, indeed, prohibitive. They therefore propose that the Legislature should extend to agricultural land in the future preferential rating in a similar manner to that under the old system.

On page 606 they state: "We would therefore suggest that agricultural land for the purpose of this new site value rate should be rated, not at its full value, but at such a fraction of its value as would keep the total contribution from agricultural land proportionately the same in relation to the other hereditaments as it was before the change." The intention of this proposal I quite agree with, but it will surely be a most complicated and difficult thing to arrive at the total contribution of rates in respect of agricultural land, and it will mean a series of frequent calculations to ascertain year by year what degree of exemption would have to be extended to agricultural land. I think some other system could be devised which would be as efficient and effective, but simpler. The Committee are candid in admitting an objection in which they say that an element of truth exists—namely, that the site value method would lead to overcrowding. I think all surveyors will agree that to release buildings from the burden of rates, and to impose all rates on the land, would tend to a congestion and overcrowding of sites, which is by no means desirable. The Committee suggest, as a preventive means, the extension of powers given under Town-Planning Acts, whereby local authorities should be empowered to restrict building in the areas under their jurisdiction in such a way as they think best for the needs and benefit of the community. On this question of housing the Committee make the following remark on page 559, but I must confess that I do not understand what it means: "But in assessing a property to rates, it would be easy to allow for any restrictions upon its use which were in the public interest (compare the provisions of the Finance Act); if this were done, the man who refused to allow overcrowding on his property would be charged less in rates than one who built up to the limit." I fail to appreciate how he is to be charged less in rates; surely the rateable or site value will be the measure of the charge (in rates).

On page 573 the Committee refer to what

they term the principal objection to the proposal for the complete transference of rates to site, viz., "If the proposal immediately to transfer all rates from the composite value to the site value were put into force, the charge imposed upon some properties would be considerably reduced, and the charge imposed upon others would be largely increased. If the charge imposed upon a property is increased, the fortunes of those who are interested in it are, in a greater or less degree, diminished; if the charge is diminished, their fortunes are increased. The changes in the fortunes of individual owners and occupiers that would result from a complete transfer of rates from rateable value to site value would be very large and very sudden. In this fact lies the principal objection to the proposal." On pages 574-6 the Report shows very clearly what the effect of the rating of site values would be on payments in respect of any particular hereditament: "The new valuation for rating purposes would give for every hereditament the value of its site; and its composite value . . . is already ascertained under the name of 'rateable value.' From these two values can be deduced the ratio between the site value of every hereditament and its composite or rateable value. Similarly, the ratio between the site value and the rateable value of the whole of each rating area can be ascertained. This will be the average ratio of site value to rateable value for the whole area." Subject to the partial exemptions of agricultural land, and certain other properties, they say: "Properties on which the ratio of site value to rateable value is greater than the average, for the area will contribute more under the new system than they do now." Some clear examples follow indicating the effect on hypothetical hereditaments. Then it is shown that one reason for a hereditament having a ratio of site to composite value higher than the average for the district may be that the valuation authorities neglect to have the place efficiently valued. I believe that there are many thousands undervalued from this cause, and hence if the proposed change in rating comes, the occupiers will be rather startled at the increase. Authorities who have failed in their duties will therefore be responsible for some of the large increases in rates, though the uninformed will perhaps be inclined to suggest that the old system was the better, and as neglect in its efficient administration may have benefited them, they will no doubt to that extent be right. These statements are made in Chapter V., which is headed "The Complete Transference of Rates to Sites, and its Effects upon Individual Owners and Occupiers," and the illustrations given on page 575 are based on the assumption that all rates are raised on the site value. This being so, I fail to appreciate why the composite value should be shown in the new valuation for rating purposes. (See page 574, already quoted.) There does not appear to be any explanation. In order to indicate the probable comparative effects of the change as between different classes of property, tables are given on pages 581 and 582 showing in certain cases what would be paid under the old and under the proposed system. These tables are not as clear as they might be; indeed, I consider them very confusing, to take Table 1, for instance:—

Block.	R.V.	S.V.	Amount Paid in Rates.		Increase (+) or decrease (-) p.c.
			On R.V. Basis.	On S.V. Basis.	
A	£ 300	£ 2,100	£ 100	£ 1,557 10 0	+ 1,457
B	300	210	100	155 15 0	+ 56
C	300	180	100	133 10 0	+ 33
D	300	135	100	100 0 0	—
E	300	120	100	86 15 0	- 33
F	300	60	100	44 10 0	- 56
G	300	15	100	33 7 6	- 67

Note.—S.V. means annual equivalent of site values (See footnotes, pp. 575 and 577).

You will observe that the total amount raised on the basis of rateable value is £700, whereas that raised on the site value is £2,091 7s. 6d. I cannot understand why the

table has been constructed in this manner, and am afraid it may tend to be misleading in some quarters. Item A is startling. Can any argument justify the levy of an annual rate of £1,557 10s. in respect of land which has a site value (annual equivalent) of only £2,100? The Committee very rightly point out that it is not possible to foresee precisely what the changes in value would be, but their statements and findings are sufficiently clear to indicate the direction in which value might be expected to alter. It is contended that the tables show "how enormously the charge on undeveloped property would be increased as compared with what it is now." Herein lies a very great objection to the rating of land values. Land in the outer districts of towns which is possessed of a perspective building value will be charged to a greater extent even though it be used for agricultural purposes, and even though it be not yet ripe for any other use. Every surveyor must know of acres and acres of such land which, by reason of its proximity to the building zone, has a higher capital value than for agricultural land. But is it reasonable to say that because of that prospective value that it is in fact under-developed land? If it can be shown that development is overdue, or even due, then let the land be considered as having a greater liability to rating than agricultural land, and rated as such. It is time enough to levy an annual rate on improved value when that improved value matures, and is not merely prospective. As a general observation on Chapter V. one admires the candour of the Committee in showing the undesirable results which would follow the total transference of rates to site, and is impressed with the very fair way in which the subject is treated. The attitude taken up, and the atmosphere of the discussion generally, tend to restore confidence; particularly is this so when one observes the title of Chapter VI., viz.:

PRACTICAL SCHEMES IN THE DIRECTION OF THE RATING OF SITE VALUES.

Briefly to summarise them, the schemes are—

(a) That all future improvements be exempt from rating.

(b) That all increases in local expenditure be met by a rate on site values.

(c) That part of the present expenditure be met by a rate on site values.

(a) The Unrating of Future Improvements.—No explanation of this is necessary, for I do not believe that any just argument can be raised in its favour, and the Committee "lay down . . . as a cardinal principle, that no scheme of rating reform would be acceptable which discriminates between present and future improvements."

(b) That all Increases in Local Expenditure be met by a Rate on Site Values.—The Committee recommend this, their second proposal, for adoption; indeed, they say "it would be essential that our first and second proposals should be compulsory." In discussing its merits it is claimed that "the great advantage of such a scheme would be that it would cause no sudden or drastic alteration in values, and no sudden transfer of wealth from one individual to another." There is a touch of humour and irony in the suggestion that it is not desirable that wealth should suddenly be transferred from one individual to another. The experience of the last few years will enable one to appreciate how great such a boon would have been. I cannot see my way to agree with this proposal. It would tend to make people who are not directly interested in site values very extravagant in their demands from local authorities. Under the feeling that extra local expense would be placed on the shoulders of the landowners, many rate-payers would be tempted to abuse the power of their votes and benefit by the changed conditions in a very unfair and iniquitous manner. It is a matter for speculation as to how many would succumb to that temptation, but many would welcome the opportunity.

(c) Transference of a Portion of Present Expenditure to Site Value.—The proposal under this head is that a rate of 1d. in the £

shall be levied on the capital value of every site, and that the remainder of the money required shall be raised in the same way as present rates. It is claimed that if such a system existed, it would exercise an influence towards the better development of land. I agree that some portion of the required money might with advantage be raised directly from the site, but to fix it at 1d. in the £ is not desirable, owing to the varying rate in the £ throughout the country. A site rate of 1d. would effect a greater change in a district with a low rate than in a district with a high rate. My view is that a proportion of each year's money should be raised by means of the site rate, and should be about one-eighth or one-tenth. This proportion would, I believe, be sufficient to effect the desired economic tendencies, whilst it would not be unduly burdensome on any class of owner, neither would it free any rate-payer of liability to contribute towards local expenditure.

THE PRINCIPLE OF "REBUS SIC STANTIBUS."

On several different occasions in the Report the Committee state their objection to rating on the principle of "rebus sic stantibus," and to it they ascribe many of the anomalies now alleged to exist. In their view it is not right that any place should be rated on a figure which represents the value to its user at any one particular time. They prefer that the basis of the rate should be something in the nature of a percentage on the capital value of the premises. There are certainly many instances where the operation of the principle does appear to be rather unjust to rate-payers generally, but to sweep it away entirely, and adopt in its place a system of percentage on capital value, would, in my opinion, lead to graver anomalies and inconsistencies than any that now exist. For death duties, and other taxes which only fall due on infrequent occasions, capital value might well be an equitable basis, but for rating, which is essentially an annual charge, and, what is most important, is intended to meet annual expenditure, annual value should be adopted. As the expenditure of a local authority may vary from year to year from various causes, so also can the annual value of premises vary very quickly from year to year without much change in capital value, and I would insist that annual value be the basis for all annual rates. This raises the question as to whether the annual value is necessarily ascertainable from the capital value. The Report shows, by means of tables, several instances of premises which have been sold at figures representing anything up to 700 years' purchase of the gross yearly value. The deduction drawn by the Committee is that in such cases the annual value was insufficient, or the capital value was excessive, one or the other; and when they speak of annual site value they refer to it as being 5 per cent. of the capital site value. I do not think that any surveyor will agree with their contention on this point. Capital value takes into account not only the current possibilities of the land, but the prospective value which it may be considered to have. I need not discuss this point at length, as it is so very obvious to all who are concerned with the valuation of property, but what I do want to emphasise is that annual value should be the basis for an annual rate, and by that I do not mean an average annual value, but a value of the premises from year to year under the then existing conditions. So far as the rating on the composite hereditament is concerned, I am strongly of opinion that the principle of "rebus sic stantibus" should continue to apply.

THE EFFECT OF FINANCE ACT VALUATIONS.

On page 583 the Committee state: "The site value of those properties on which the burden is increased would fall, and of those on which it is diminished would increase; but precisely how great the decrease (or increase) would be it is impossible to say with accuracy." The Finance Act, 1910, introduced new taxes on land. The basis for the increment duty is the site value of land as on April 1, 1909, that value being a starting-point, and the duties charged being in re-

spect of any increment over that sum. We have seen how that a rate levied on site value will tend to alter the capital value of the site, and therefore of the composite hereditament also. The valuations under the Finance Act have been made in circumstances with which all surveyors are familiar. Many of them became fixed merely by default of appeal. If the present proposals become law, and the Finance Act valuations are adhered to as the basis for assessing increment duty, an anomalous, and, in my opinion, iniquitous state of things will then obtain, viz.: The two values which are compared to decide what, if any, increment duty is to be paid will have been ascertained under entirely different economic conditions. Consequently some people may have to pay increment value duty on increased value which will have accrued, not by reason of development, but by the operation of Act of Parliament. This might be considered equitable on the ground that the owners do not contribute towards that increased value, but what of the reverse side of the question? That is much more serious. There may be others who have paid increment value duty or reversion duty immediately before the coming into operation of the new conditions, which very conditions may have the effect of immediately eliminating that increased value on which duty has been paid.

I am afraid that my paper is already longer than was intended, but, before bringing it to a conclusion, I must refer to one or two other points. The third recommendation of the Committee (see page 678) is that "local authorities should be given the option of raising, by a rate upon site values, such further part of their expenditure from rates as they think fit." This is a point to which I take very strong objection, as I submit that such a course would lead to most iniquitous results. Some things may be left to the discretion of the local authorities, but I venture to say that the option here recommended would give them power seriously to upset local economic conditions. If two districts had as their rating authorities gentlemen who, in the one case, are principally sympathetic to the landowning classes, and in the other case hostile thereto, it is probable that the former would raise by a rate on site value the minimum demanded by law, whilst the other would raise a very large proportion, if not all, by means of the site rate. These circumstances could easily arise, and probably would in many cases. The result would be to create entirely different economic conditions which would be very serious and most undesirable, especially if the districts were close together or engaged principally in similar industries. I would therefore urge, in fairness to all, that in the interests of the whole country, that no such option be allowed, but that if the site value principle is adopted, it should be laid down by law exactly what proportion of rates should be raised by that method. In defence of those who endeavour to administer the old system, I feel that I must call attention to the difficulties which beset them, and express my conviction that the system would have been much less unpopular, and have given rise to fewer inconsistencies, if the Legislature had laid it down definitely that a revaluation should take place periodically, and the surveyors should have a right of entry and inspection, and also be able to call for the production of information concerning the premises to be valued. It is very strange that the metropolis and the country should be differently treated in this respect. I would recommend the extension of the provisions of the Metropolitan Rating Act, 1869, to the whole of the country, and the introduction of a rate on site values to the extent which I have named earlier in my paper.

I agree with the Committee that appeals to Special and Quarter Sessions should be abolished, but I would prefer that they should be heard by an appellate tribunal consisting of a barrister or solicitor and two eminent valuers as recommended in the Kempe Report, rather than by the Judicial Land Commissioners as the Land Enquiry Committee recommend.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A meeting of the Royal Institute of British Architects was held on Monday evening at 9, Conduit-street, W., Mr. J. Alfred Gotch, F.S.A., vice-president, occupying the chair. Mr. E. Guy Dawber, hon. secretary, announced with regret the decease of Mr. Harry Wilkinson Moore, of Oxford, retired Fellow.

ENGLISH CHURCH MONUMENTS.

A paper on this subject, illustrated by lantern slides, was read by Mr. James Williams. In the course of some introductory remarks the author observed that England abounds in good stone and marble. From the earliest times the quarries, their nearest towns, and the great churches have been centres of monumental masons and their works. Throughout the Middle Ages flat tombs, marble and stone effigies, stately monuments, reredoses, saints, and angels were made and kept in stock and distributed throughout the country. The number of skilled workmen was then much larger in proportion than it is to-day. London was, perhaps, the chief city for all the arts, although every large town was a self-contained centre. Purbeck marble from Dorsetshire had been used for architectural purposes in Roman times, and from the 12th century a considerable trade was done in the shop-made carved and moulded caps and bases, shafts, fonts, carved effigies, slabs, altar-tombs, and blocks of this material. Purbeck became an important centre and school of masons. Some of the marblers from Corfe came to London and Westminster, and, settling down, worked in the shops of the effigy-makers. The chief Purbeck effigies were made from about 1150 to 1300, and those of the London school, consisting chiefly of bishops and knights in armour, were much in favour, and were copied in stone throughout the country. Trade fell off in the early part of the 14th century, when alabaster was introduced and became generally used for the effigy and monument. Purbeck marble, however, continued in use for monumental purposes, apart from the figure, down to the 16th century. The shop production of Purbeck marble and stone effigies in the mediæval period was an outcome of the early carving, and it accounts for the number of conventional cross-legged figures which are to be found all over the country and have little connection with the attitude which is supposed to represent a crusader. Effigies and monuments of stone were produced before as well as concurrently with those made in Purbeck marble and alabaster. The masons of Wells, before 1200, had made the effigies of their bishops in Douling stone. Many others came from the same shops, and when the Purbeck industry declined Bristol and Wells, amongst other places, became famous partly through their nearness to quarries of good stone. The best period of the freestone effigy is said to have been from 1250 to 1360 (during which time there came an influence on sculpture from France, on the London carvers, and from Germany in the northern school). The appearance of the cushion under the head marks the change in the treatment of the effigy from the upright character to the recumbent attitude. The stone effigies of London were generally coated with fine plaster, and this, together with the whole monument, was painted in rich colour and relieved with gilding. The mail armour, at first painted on the effigy, was with other details afterwards impressed on the face of the plaster when soft, or was carved. From the 12th to the 15th century the architectural and constructive motive is the key to all the finest work of that period. Wherever there was a large supply of good stone a school of masons and carvers generally sprang up, although the trade was not confined to the quarries, blocks of stone being sent by road and water to all parts. As early as the 12th century alabaster was used for architectural works. The best alabaster came from Chelaston, Derbyshire, though Nottingham is said to have been the headquarters of the carvers. London, too, was a great centre of

the alabaster trade. The facility with which it could be carved and coloured for monumental purposes and for architectural furnishing naturally led to its extensive use, but the chief part of the trade was in the effigy and tomb. Oak in the Early and Middle Ages was extensively used for constructional and decorative works, particularly in districts remote from quarries, and altar-tombs with their effigies and canopies were often made in oak, painted in colours, gilded, or enamelled. Wood effigies, chiefly in oak, have been used, together with freestone, marble, and metal. In some places wood came more readily into use where good timber was obtained in abundance and skilled workmen were available. There are about ninety effigies existing, twenty-four of these being of women, and the rest nearly all in military attire. It is said that the Black Death killed off most of the carvers of effigies, and certainly not many in wood were made after 1350 until the 16th century, when the use of wood was for a time revived. Many of them were painted or cased in metal. The finest instance of a wood canopy is that above the tomb of Archbishop Kemp (d. 1454), in Canterbury Cathedral. The effigy, as well as numerous and important accessories of the monument, was sometimes made in metal, chiefly bronze. As regards effigies in metal, perhaps no church can show a more complete and beautiful series than our own Westminster Abbey, the earliest being those representing Henry III. (d. 1272) and Queen Eleanor (d. 1291), both by one William Torel, a goldsmith, who worked in the King's palace; the casting took place in the churchyard adjoining the Abbey. The next in the series is the effigy of Edward III.; here the work, although the face is apparently a cast from life, is much coarser. Then follow the figures of Richard II. and his Queen; these are more carefully treated. The last of the series are the Countess of Richmond and of Henry VII. and his Queen, all three by Torregiano; they are surpassingly well done, although the draperies are not so elaborately disposed of as in Torel's work. An interesting feature in connection with the table tomb is the metal hearse, which served the double purpose of protecting the effigy and providing standards for the numerous candles which were lighted on the occasion of various festivals. Cast-iron slabs were used for memorials as early as 1500, both in the church and churchyard, near the old iron-work centres. Arms and heraldry formed a conspicuous feature on the monument, and came into use here about the middle of the 12th century. Crests and devices were shown on coins from an early period, and on seals from the 12th century onwards, for individuals and for both religious and civil corporations. One of the first shields bearing arms is on the seal of Richard I. (1189), showing the lion rampant. Early in the reign of King John the parted shield first appears, followed by quarterings, which spread through the example set by Queen Eleanor on her marriage to Edward I. in 1254. But arms are not much in evidence here until the end of the 13th century. Towards the end of the 14th century bishops exhibited the arms of the see with their own. In the 15th century painted arms decorated all the important possessions of the holder, and throughout the Middle Ages down to modern times heraldry was a marked feature of the monument. The heraldic tabard in the first quarter of the 15th century was worn over the steel armour, and women as well as men are sometimes shown on effigies with the heraldic cloak or mantle. Supporters to the shield appear about the middle of the 14th century. Badges were used from early times. Orders, collars, and chains are shown on many effigies. In the 12th century the first effigies of knights appear clad throughout in mail armour; in succeeding ages, slowly and naturally, the armour changed with the changing weapons of war, and the sculptured effigy shows this in a marked way, making a continuous historical record. Armour has been roughly classified as follows: 12th century, ring and mail, unmixed with plate; 13th century, mixed mail and plate, the mail predominating; 14th century, mixed mail and

plate, the plate predominating; 15th century, era of complete plate. From the end of the 15th century armour became more decorative than useful, but it continued to be shown on monuments down to the 17th century. In ladies' costume the various fashions are faithfully shown on the effigy and the weepers, and will repay careful study. Small tombs are an interesting section of monumental art. In such cases the figures, although of children, are generally shown in the armour or costume of men or women of the time. In Elizabeth's reign rows of kneeling children often appear on the tomb of their parents. Semi-effigial monuments, of which there are a considerable number, chiefly of the 13th and 14th centuries, should be noticed. The figure of the semi-effigy on slabs and brasses is generally associated with a cross. Some carry a double semi-effigy. Many were done about the period of the Black Death, some of a rude character, like the work of unskilled carvers. Perhaps the greatest difference between mediæval and modern life may be seen in the almost entire absence in the present day of colour, in our buildings, accessories, and costume—unless one called black a colour. Throughout the Middle Ages, and until the Reformation, the colour scheme pervaded everything; a legacy coming down from very early days, it had its origin in the gorgeous East. Our churches were resplendent with all the incidents of sacred subjects, painted on walls and vaulted ceilings, together with a fine scheme of harmonious decoration. The whole life and surroundings of the people were steeped in rich colour, and the monuments in the churches shared this to the full. Upon the tombs of the saints and of the great nobles was expended some of the choicest work in design and decoration; from base to pinnacle every part of the tomb was painted in glowing hues and gilded. Jewels often decorated the crowns, mitres, pastoral crooks, belts, sword-hilts, and scabbards, as well as the dress. Beautiful patterns in endless designs ran along borders and bands, square or diagonal diapering covered the broad surfaces, gilding and burnished gold were freely used on the salient points and mouldings. Quatrefoil and trefoil ornament was frequently employed, and dark-painted tracery in the sunk panels and other parts, as well as glass mosaic. The backs of some niches have patterns in gold; the vaulting of the canopies and the ceilings of the wood testers often had painted subjects on a gold or blue ground studded with stars; sometimes they were decorated with delicate scrolls of vine or other leafage. Some monuments had more gold than colour. Enamelled or painted heraldic shields were used on the table-tombs as well as on the cornice and other parts of the monument. The Christian monument begins with the stone coffin which was hewn out of a solid block and was buried underground; later, the stone coffin was interred, with the lid showing on the floor of the church; then the whole appears with the lid and sides, sometimes decorated with ornament, and forming a "raised tomb." Some of the 11th century have a rude arcading round the sides. Some slabs are coped longitudinally, and others transversely, as well as longitudinally, forming a cross, and generally taper in width to the feet. At first furnished with a simple cross, they afterwards appear with floriated crosses and borders of enrichment; some are covered with carved foliage, having birds and animals interwoven. Then the crude effigy appears on the slab. The raised tomb sometimes takes the form of a sarcophagus; afterwards the raised, or table, tomb has its sides divided into arcades, niches, or panels, often containing statuettes, and its slab generally having an effigy or a brass. The sculptured figure is shown on the monument about the early part of the 12th century, first in its simplest form, with little relief, and sometimes surrounded by carved leafage and scroll-work; then the clear figure appears. Gradually the effigy developed from the low relief sculpture to that of the complete figure, with rounded limbs, and all the details of dress or armour. Some of the early effigies are of a long, conventional type. The first effigies of bishops are bare-

headed, then a low mitre appears, and afterwards this increases in height, and is richly jewelled. At the end of the 12th century effigies in armour appear on raised slabs. Some are in partial relief, but in those of later knights the limbs stand out, and the whole of the figure is undercut. Most of the effigies abroad are shown with closed eyes, but English effigies generally have the eyes open. At the end of the 12th century the figures of knights are shown drawing or sheathing the sword. The monuments of the 13th century, as of the previous century, are chiefly those of royal personages, great ecclesiastics, the nobility, and men in armour; the few effigies of ladies appear in the simple and beautiful costume of the time. In the early part of the century effigies of ecclesiastics retain the stiff and formal character of former years. Slowly they developed to that of bolder relief and greater refinement; the effigies of bishops are shown with the head surrounded with a simple pediment-shaped canopy with a trefoil arch; this head canopy grew into an elaborate feature, supported by delicate shafts on each side, carried down to the foot of the slab, giving the appearance of a figure enshrined in a canopied niche. Some are enriched with foliage overlapping the shafts at intervals; others have a series of small niches at the sides, each containing a figure. The effigies of ladies in long, flowing robes are shown with the hands in prayer, the head on a cushion with an angel at each side, and the feet on dogs. Fine effigies of the nobility clad in armour which exist vary considerably during this period. Many form the cover of the stone coffin; others are placed on a table tomb decorated round the sides with simple arches, or with panels containing a quatrefoil in each. The plain-shafted arcading round the tomb had been in use some time when small figures, called weepers, were introduced in canopied niches, representing members of the family. Valuable in the first stages as examples of beautiful sculpture, they are also an excellent record of costume in each period. A great feature towards the end of the century is the canopy overarched the table-tomb with a straight-sided pediment, decorated with crockets and finial, and flanked by buttresses. Some form part of the tombs which are recessed in the wall of the church. Another type of monument had its origin in the rich hearse which stood in the church over the coffin at burial. Many decorated slabs exist of this century, as well as coped tombs with crosses in relief, and recesses were often built for them. Towards the end of the century some table-tombs have armorial bearings on shields in the arcading round the sides. Although in the case of many effigies a purely conventional character was adopted, others show marked features, which indicate an attempt at a likeness. By the end of the 14th century portraiture had made considerable progress, and in the 15th century it became an established feature; but from the 16th century the individual features and expression were generally shown. As a whole, monuments in the 14th century show great variety of design and freedom in treatment, with an ever-increasing richness and profusion of carved ornament and foliage, based upon a close study of Nature. That beautiful feature, the arched canopy over the tomb, in its early stages had the equilateral arch, with circular cusplings, plain spandrels, and broadly-spaced crockets. This grew into the ogee arch with double cusplings, carved spandrels, close-set crockets, rich heraldic display, and profuse decoration. The sides of the table tomb developed an increased number of niches with elaborate tracery heads or richly carved and crocketed canopies. The great canopy may cover either a slab or a table-tomb, and the monument often rests beneath the pier arches of the chancel, or is recessed in the wall—some with moulded arch, crocketed label, and flanking buttresses, others with a triple-arched and groined canopy resting on piers. A great feature of this century is the table-tomb with a lofty spiral canopy. Coped and flat tombs, as well as incised slabs showing many forms of ornamental crosses, continued in use, and various devices were employed

showing the rank or calling of the deceased. The Purbeck effigy went out of use at the beginning of the 14th century, and the oak figure came in for a time, and then the alabaster effigy, which remained for a long period, together with the stone effigy. Early in the century the engraved figure on plates of brass of Flemish origin appeared, competing with the carved and painted effigy, but all continued in use together. Wall-tablets, comparatively rare in Mediæval times, have an example in that of Godfrey Foljambe, in Bakewell Church. About the middle of the 14th century monuments appear showing in the canopy of the recessed tombs the horizontal lines of string and moulded cornice, crowned with carved leafage; about the same time the piers of the triple-arched canopy were discarded, thus forming a suspended canopy. The 15th century is notable for the number, richness, and great variety of its monuments, table-tombs, canopied recesses, engraved brasses, marble slabs, and chantry chapels. The table-tomb generally had its painted stone or alabaster effigy; the sides of the tomb are decorated with cusped and crocketed arches, or with small canopied niches. Sometimes the head of the effigy is surrounded with a rich canopy connected with a series of niches on each side of the figure. The triple-arch canopied recessed tomb, with a bold cornice, is a common form of monument in the 15th century. The single-arched canopy of ogee form, with crockets and finial, and flanked by buttresses, continued in use until about the middle of this century, as well as that surmounted by a bold cornice with panels of tracery underneath it. The flat-painted canopy in wood, with decorated cornice, suspended arches, and ceiling furnished with a sacred subject, is not uncommon during this period. The alabaster effigy throughout this time shows all the minute details of dress and armour. A special feature in the development is the chantry chapels, which were built in such large numbers during this century, and which are unknown outside of England. Late Gothic work is well illustrated by the magnificent chantry chapel of Prince Arthur, eldest son of Henry VII., in Worcester Cathedral. The final development of Gothic, as seen on the monument, resulted in a great display of mechanical skill. Never had the carver such an opportunity as the chantry chapel and monument provided in filling the niches and furnishing the sculptured subjects and carved ornament for cornice and string. Equal scope was there for the painter in covering the free spaces of vault and panel and the whole monument with glowing colour. By the middle of the 16th century Gothic art in England had reached its final development, when there gradually arose an entirely new outlook in architecture and the other arts, that of the Renaissance. The earliest monuments showing this influence were those executed by the Italian artist, Torregiano, for Henry VIII. Numbers of Italian workmen were attracted to this country through the encouragement given them by Henry VIII. and his Court, but after that monarch's death most of the Italian workmen left the country, and their special art soon died out. Gradually, however, the transition from Gothic to Classic architecture proceeded. To meet the demands of the nobility for the new style, artists went to Italy and France to study. Both the Dutch and Italian influence played a great part in the production of many monuments of Classic character in the 17th century. Eventually Roman architecture was fully introduced into this country. Most of the architects designed sepulchral monuments, or worked in conjunction with sculptors and monumental masons. Classic monumental sculpture, however, became strangely altered from its original purpose, and fell from its high estate. In the best periods of Gothic art the carved effigy was treated conventionally, as an accessory to the design of the monument, and the limitations in the use of all materials were freely acknowledged. This simple and beautiful unity of purpose gradually gave place in monumental art to ostentatious display. In conclusion, the lecturer protested against the

erection of huge monuments in our great churches, and suggested that the small tablet would, in most cases, provide a sufficient memorial.

In proposing a vote of thanks to the lecturer, Mr. Arthur Keen remarked on the careful detail and wide grasp of the subject with which the lecturer had treated his theme. From the descriptions and lantern illustrations they had gathered some idea of the infinite variety which characterised Gothic monumental designs in England. There was no feeling of conscious effort or of a striving after originality, but while precedent and tradition were followed, the fashions slowly changed with the progress of the times, and with the introduction of fresh materials and alteration in the styles of architecture. The lecture had been an admirable exposition of the possibilities of Gothic art, which was much more adaptable than any other phase of design. The charge was made, and was partially justified, that the monumental craftsmen employed the forms of construction falsely for decorative purposes, especially in features executed in wood in the form of buttresses, finials, and crockets. But, as a whole, the criticism failed, for in all this Mediæval art there was a wonderful charm, a freshness, and a technical skill that made the work most interesting and valuable. The sterling quality of those monuments was due to the fact that the masons who worked them also designed them—a factor almost unknown at the present day. Our modern work would gain much in character if our craftsmen were taught the niceties of architectural detail, were shown first-rate examples of work, and then left with a comparatively free hand to carry out their own conceptions. In most of the movements that had been described it was noteworthy the contemporary costumes and accessories were frankly and boldly delineated.

Mr. Laurence Weaver, F.S.A., seconded the motion. He thought the origin of the wall-tablet might be the removal of a tomb slab from its position on the floor, perhaps to make way for a later memorial, and its erection in an upright position. The earliest mural tablet known to him dated from 1381. The earliest memorial seemed to him to have been a representation of the Crucifixion, or other religious subject; then the figure of the donor was introduced at the side, and this tended to grow larger in proportion, until the character of the monument was changed. He believed there were no known bronze tablets earlier in date than the 19th century. The figures of weepers on Mediæval tombs were not, as Mr. Williams appeared to think, personal memorials of relatives or friends, but were merely conventional representations. Mr. Williams disapproved of standing figures as memorials, but the Greek stele was in this attitude, and belonged to the very first type of Greek art.

Mr. A. J. Bolton trusted no attempt would be made to remove monuments, whether ancient or modern, from our churches. Much injury had been wrought this way in the 19th century, and he regretted Mr. Williams seemed inclined to remove those historic memorials from Westminster Abbey and other great cathedrals.

The vote of thanks was cordially adopted, and was briefly acknowledged by the lecturer.

THE SOCIETY OF ARCHITECTS.

The monthly meeting of the Society of Architects was held at their headquarters, 28, Bedford Square, W.C., on Thursday evening in last week, the chair being occupied by the president, Mr. E. C. P. Monson, F.R.I.B.A., F.S.I. Mr. A. Montefiore Brice, Barrister-at-Law (a former secretary of the society) read a paper entitled "The Law Relating to the Remuneration of the Architect," which was published in extenso in our last issue, pp. 290-92.

In proposing a vote of thanks to the lecturer for his concise and yet comprehensive paper, Mr. S. T. T. James said the gist of the address was contained in the word "contract." That was the dominant note from start to finish. The difficulty architects

sometimes found themselves in was due to a large extent to the omitting to bear in mind this question. It behoved every architect on entering into a contract with building owners to be sure of his ground, to endeavour to get everything definite from start to finish, and not to rely upon "implied" contracts or "custom." An "implied" contract meant a lawsuit; "custom" meant calling expert witnesses to establish it—a very expensive and unsatisfactory process. With regard to the ownership of drawings, many young architects were under the impression that they were their own property; but they were the absolute property of the person who had paid for them. If, however, a building owner instructed an architect to prepare plans for a suburban villa, which was duly erected, what would be the position of the architect in the event of the building owner utilising the plans for the erection of any number of similar houses, without remunerating the architect?

Mr. Thomas Martin seconded the vote of thanks. He agreed with Mr. James that relying upon implied contracts and custom had occasioned much trouble to architects. The major part of the difficulty was due to the unsatisfactory form of building contract in use. Perhaps Mr. Brice would have some suggestions to make as to the framing of a new contract that would meet modern requirements, in which case he would have rendered no small service to the society and to the profession. The position of architects when called upon to appear in courts of law was unenviable, and judges had a custom of referring to architects as "surveyors." The position of the architect in regard to his fees was very unsatisfactory; the charges were not legalised, and were decided upon by jurymen who were laymen in these matters. It was time that cases in which contracts were concluded should be referred to a technical tribunal. If the profession went to Parliament with a united front and asked for their fees to be legalised, they would probably get what they wanted.

Mr. Ellis Marsland referred appreciatively to the kindness of Mr. Brice in keeping his engagement to lecture while on active service. The lecturer had shown how uncertain the law was on the point of an architect's remuneration and how difficult it was to recover anything without a definite contract. He had also demonstrated that what the society had been struggling for for many years—statutory registration—was the only solution of the difficulty and the only means of placing the architect's remuneration upon a sound and satisfactory basis.

Mr. Arthur H. Salisbury said his experience had been that it was not always wise to emphasise to the building owner the fact that there would be a 5 per cent addition to the cost of the building. One generally got paid in the end. Other work which architects had to perform, such as the valuation of building-sites, surveys, and preliminary arrangements for building schemes, would almost always come under the title of "implied contracts." The fact that under an implied contract an architect was, as the lecturer had emphasised, only entitled to what he had earned would be quite satisfactory to most professional men. Whatever was done in the way of statutory registration, he did not think that architects would ever get away from implied contracts, because a great deal of the work was not solely confined to the erection of buildings.

In summing up the discussion, the President remarked that courts of law generally substituted their own scale for that drawn up by the Royal Institute and adopted by the Society. The R.I.B.A. were now considering the matter with a view to drawing up a new scale of charges for architects. He agreed with Mr. Salisbury that small jobs did not pay the architect, who had to personally supervise the work, and whose time in many cases must be worth more than was paid for it. Registration was, as Mr. Marsland had said, the only means of getting a scale of fees sanctioned by Parliament, and until statutory registration was secured they could not hope to improve the position of architects in that respect.

In response to the vote of thanks, which was carried by acclamation, Mr. Montefiore Brice observed that one or two speakers had manifested hostility towards implied contracts. There never had been written a contract which did not contain implied contracts, and there was no legal principle which should guide men in dealing with them. With regard to the inquiry of Mr. James as to the after-use of an architect's plan, it was for the professional man who sold the plan to impose the conditions of sale. If the architect put into writing conditions that he would sell the plan for the erection of one house only, the client would probably proceed to engage another architect who did not lay down such restrictions. It was perfectly right for the architect to impose whatever conditions he liked to the sale of his plans, but having let them go for a price without having reserved his copyright he had no further interest in his drawings. He agreed that it was very hard, but legally the whole of the drawings—not only the finished lines, but the rough sketches—were the property of the employer upon payment of the architect's fees. There was no doubt the present form of contract could be improved upon. He agreed with Mr. Ellis Marsland that the simplest and best way of establishing the right would be by a statutory schedule of charges, and when they obtained registration that would be within their grasp. There was, of course, always open to the architect the same liberty which the solicitor had in dealing with a client, to seek remuneration for his proposed work, not on the basis of an ordinary scale of charges, but a lump sum for the work to be performed. In that case an architect would have a special contract, and that was what he would be inclined to advise.

CONCRETE: A MEDIUM OF AESTHETIC EXPRESSION.*

By IRVING K. POND, F.A.I.A., Chicago.

At the forty-first convention of the American Institute of Architects, held in November, 1907, I reported, as chairman of the then existing committee on applied arts and sciences, upon the possibility of concrete in the field of architectural expression. Much of the matter, which I then formulated with the assistance and approval of the other members of the committee, is altogether applicable to the subject to-day. The introductory sentence was as follows: "Although the exact relationship existing between concrete and steel reinforcement under a given condition is yet to be accurately determined, and the structural use of reinforced concrete is yet to be reduced to an exact science, and although the manipulation of concrete and its application to structural uses has not as yet become an art, yet the fact that in its use and treatment there are immense scientific and aesthetic possibilities brings the subject of reinforced concrete well within the field of study of this committee, especially at this time when the general topics of steel structure and concrete reinforcement are before the Institute for discussion." The science during the years which have elapsed since that was written has possibly become a bit more exact, engineers have been at work—many formulæ have been developed, many tables have been compiled, and much has been gained in the way of practical experience. This practical experience has been of benefit in developing the art of manipulation, for Art consists in "doing"; but the art of design seems not to have kept pace. It is to stimulate that art, and to awaken in the architect a realising sense of his opportunities and responsibilities that I then entered into the discussion and now continue it. It is essential throughout such discussion to keep clearly in mind the true and abiding status of architecture and the architect. The architect is not a mechanical fabricator of mathematical diagrams. His highest concern is with the ideal, and his first sketch should present an idea, an idea

which is conceived in beauty. The past has demonstrated that architecture as the expression of the ideal can materialise in but one or the other of two great manners: that of the articulated structure, unit added to unit, and that of the plastic mass. The most noble development in the first manner is in the architecture of masonry (brick or stone), and this development has reached its logical limit; in no way except, may be, in mere size, its least noble attribute, is it to be excelled. Under the vital art of this first manner lay an intuitive science; under the too transient beauty of the work of the second great manner lay nothing of science at all, and so this architecture has well-nigh vanished, except as some adherence to the principles of the first manner has interposed to save. And now comes the ghost of what might have been and calls for an incarnation, feeling (if a ghost can feel) that in reinforced concrete science is preparing a body which can be vivified with the spirit of art. If this feeling is substantiated, to the artist is opened up a new range of possibilities. The architect becomes in a sense a sculptor, a moulder of monumental mass, not the fantastic figure, who, at first, with sharply insistent blows, and then with infinite persuasive tappings, releases the form imprisoned in the block, but a creative constructor who builds up his ideal and shapes it by the irresistible, though tender, moulding of mass and form. In this the architect assumes no new function, but develops that feeling which by nature and of necessity inheres in the architectural mind. The vital difference between the sculptor and the architect is that the former is bound by no necessity for expression in structural terms, mass and form being enough for him; while the architect, if he really is to be an architect, must have structural laws ever in mind, and must make his work an interpretation of these laws and a symbol of their aesthetic value in the expression of the higher ideals of his race and time. The architect, as well as the sculptor, revels in this feeling of mass taking form under his skilful manipulation; and the feeling for plasticity and for mass in flux is potent in the true architect, even though he be designing in the most refractory medium a masonry-clad steel skeleton. In most of his work the architect has to content himself with an intellectual substitute for real feeling, and his conscious delight is rather intellectual than emotional as the idea takes form in the sketch and in preliminary plan and elevation. His fingers may itch, they do itch, to feel the flow of the mass, but the feeling remains abstract and intellectual. Therefore certain architects, if not, indeed, the architectural body-general, are viewing with keen interest, when not actively aiding, the development of the possibilities of this fairly new and altogether plastic medium, reinforced concrete; a medium which really does flow and is moulded, and through which the form appears in gracefully unfolding stages, till the final mass stands revealed, a veritable unit. One cannot in thought connect with this materialisation the shock of unloading beams, the rattling musketry of riveting, the petty and fussy application of fireproofing and surface coating. In fancy, as almost in fact, the architect sees the flowing mass take form under his own hands.

Though the use of concrete goes back into antiquity, plastic architecture would seem to be in the veriest infancy, and would seem also to be asking the genius of this age to give it perfect expression and make it worthy to stand with the architecture of the past and the yet-to-come. Though the past be examined in precedent, little will be found. Rome used concrete in bulk—but undeniable evidence of a scientific use of the material is wanting. Rome applied superficially the arts of other times and countries, but of itself left to posterity only monuments expressive of a highly temperamental force, breathing little or nothing of spirituality. Persia covered with stucco or veneered with beautiful tiles her masses of crude masonry. The Arabians and the Moors expressed their emotionalism in a plastic architecture

* Paper presented at the Annual Meeting of the American Concrete Institute.

decorated with a skim-coat of ornamental plaster or an incrustation of tile, intricate in pattern and beautiful in colour. The concrete of the mass was but mud, and the science of building was unknown. In such material beautiful day-dreams were realised only to crumble when the spell was past. The Spanish missions were built with rare feeling for mass and light and shade; but feeling swayed and science did not guide. With the science of to-day to guide and the art experience of the past to illumine into what logical, noble, and beautiful forms should not concrete shape itself, to the end of an enduring, spiritual architecture.

The possibilities, even the aesthetic possibilities, within the range of reinforced concrete construction can hardly be overestimated. Little beyond the introductory chapter has been written in the history of reinforced concrete, and every advance in the science of its manufacture and use will signal an advance along the line of artistic application.

Except in well-defined types, designed to serve certain well-defined uses, it is impracticable so to carry masonry construction beyond and behind the façade as to result in a homogeneous structure—wanting which architecture becomes but a hollow sound. The architecture of a reinforced plastic material may, and logically will, express itself throughout the entire structure to the remotest core. The unity, the truth, the harmony of the whole may in every part be manifested. Therefore, again, the possibilities inherent in concrete present themselves alluringly to the architect, to whom the art means as much as does the science of building.

The architectural brain is not so congested by the weight of pregnant thought that at a blow a Minerva shall issue forth full-fledged and full-armed. That is not the history of the evolution of an architectural style. It will take time, and struggle, and developed artistic perceptions in this, as in former cases, to reveal the possibilities of beautiful and of monumental design.

It may well be conceived that a moulded architecture, so to speak, an architecture of flowing and harmoniously interrelated masses, may not appeal immediately to the architect who has been taught that his art consists in naively piling up child's building-blocks on a large scale. Whatever may be urged against the deadly dulling practice of following the line of least resistance in architecture, certain it is that a material in which it is easier, as well as more logical, to fashion new and appropriate forms than to follow cut-and-dried conventions can not be regarded as other than a vivifying factor in a possible architectural development, and its advent hailed with delight. When architects relieve themselves of the notion that monumental architecture, for example, consists solely in a row of classical columns superimposed upon a basement, it will be a wholesome day for the art they profess to practise. Probably ignorance, inability, and self-distrust in the architectural ranks will remove to some more or less future the development of a monumental architecture expressing itself in new forms fashioned in new materials. Yet it is possible that, in this, as in other ages, commercialism, itself so devoid of aesthetic tendencies, will pave the way to the realisation of an aesthetic ideal. A material which holds in itself the qualifications for commercial use will in that very use reveal its aesthetic possibilities. No material which puts into the hand of the architect power to produce permanent mass and form, and add the enrichment of light and shade, colour and texture, will long be ignored when science has made its use commercially possible. It would, then, seemingly remain only for science to demonstrate the practical value of reinforced concrete, in respect to its physical properties, and art must unfold whatever it holds of beauty.

The steel skeleton developed from commercial necessity, and to clothe and protect that skeleton, the architect, naturally, used whatever means lay at his command; stone, brick, terra-cotta, and metal were called into requisition. To clothe the skeleton in one

or another or all of these materials became a fixed habit with the architect. So that when concrete came into use, not only was it ignored as a possible clothing for steel, but when the skeleton of reinforced concrete was set up it was itself clothed after the existing fashion for steel. Such is the fatal force of habit! Granting to concrete the qualities ascribed to it, that it is fireproof, that it may be rendered moisture-proof, that once in place it is not affected by atmospheric and climatic conditions, that it can be permanently coloured, can be moulded and chiselled, that it can be formed in place and need not be applied piecemeal—what better material could be sought for clothing the steel skeleton—and why the need of any cloak at all to such material when it has been treated with any manner of decency or respect by the designer? So aesthetically, there would seem to be unlimited possibilities in reinforced concrete.

It is not inconceivable that ornamental terra-cotta and tile, beautiful in colour and texture, and also sculptured stone, will be called upon to embellish and distinguish, though not in any manner to clothe or conceal, the concrete structure. The presence of these materials may be needed as a saving grace in these early days of design in concrete, to save the designers from a too brutal conception of the forms they deem the material must necessarily take. This is an unfortunate, though marked, tendency now, in what should be a refined and restrained domestic architecture, to shape concrete, and its lath and plaster imitations, into the crude, though characteristic, forms of the old mission work. It is needless to say that these forms have no meaning outside of their original environment, and would not have existed there but for the exigencies of the case—the crude nature of the materials procurable and the absence of all skilled labour.

But to-day, with art and science co-operating, it would seem as though architecture were on the verge of an awakening. Commercial architecture with us is beginning to feel the thrill. A broad monumental architecture as well is showing signs of a renewed joy in life, and structural concrete, both of itself and embellished with richer materials, furnishes the new and seemingly adequate medium of architectural expression.

Much of this was written, as I said in opening, some years ago. Looking back over these years it does not seem that there has been an advance in the aesthetic field as opportunity seems to have offered, or as might have been expected. But we cannot lay this backwardness altogether to the manipulator of concrete nor to the architect. Economics may be a factor, but it could not be a controlling one in a community which had the desire and will to advance in the art of self-expression which the art of architecture pre-eminently is. I know the time is not ripe for a finished and full expression for the community or the national life is not unified and complete; but there are qualities under the surface—refined and human qualities—which might at least find an echo in our concrete structures. Perhaps the echo is being heard, faintly at least. I sometimes think so, but with you all I desire the day to hasten, not only when architecture in concrete or otherwise shall express us, but when we shall have better selves which will demand and receive an interpretation in architecture.

THE LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council it was agreed on the recommendation of the General Purposes Committee that Sir Laurence Gomme, who retires from the position of Clerk at the end of March, be appointed Honorary Adviser to the Council in regard to antiquarian matters, and in questions regarding the history and evolution of London. Sir Laurence Gomme will also supervise the completion and publication of a volume of comparative municipal statistics, which is to be illustrated with maps and diagrams.

The same committee reported that since

November 3, when the previous list was published, seventy-five officers and employees had lost their lives while serving with the forces of the Crown. Those in the present return included two members of the Architect's Department—viz., Mr. S. Bryce, who was killed in action, and Mr. J. A. Land, who died whilst on service at home.

The Building Sub-Committee reported that they had had under consideration the question of the position of Mr. Ralph Pledge Notley and Mr. John Clarkson, district surveyors for the districts of Bethnal Green, West, and Poplar, All Saints, respectively. Mr. Notley was appointed district surveyor in 1875 by the Metropolitan Board of Works, and Mr. Clarkson was appointed by the Board in 1878. In November last the Committee interviewed these gentlemen, who were at that time both seventy-five years of age, and they formed the opinion that it was desirable in the public interest that they should vacate their offices. The Committee were anxious that they should have an opportunity of making any necessary arrangements with a view to their retirement, and accordingly suggested that they should each forthwith appoint a qualified deputy and submit their resignations, to take effect from November 30, 1915. Before acting upon this suggestion, both Mr. Notley and Mr. Clarkson wished to have an opportunity of considering their position after taking advice. The Committee now understood that they are not prepared to adopt their suggestion. The proposal was put forward as the Committee considered it desirable that they should be relieved of the responsibility of their offices as soon as possible. As, however, the suggestion had not been accepted, they felt it incumbent upon them to recommend the Council to dispense with the services of these two district surveyors, and proposed that six months' notice of the termination of their appointments be given.

The recommendation of the Parks Committee that band performances be not provided by the Council at parks and open spaces during the season of 1915 was, after long discussion, referred back with an instruction to bring up a modified scheme for 1915 at a cost not exceeding £5,000.

It was decided to accept an offer of £2,800 from the Peabody Trustees for the purchase of the freehold of Nos. 36, 37, and 38, Camberwell-green, acquired for and formerly used as a remand home, which adjoins a site on which buildings have been erected by the trustees for the accommodation of persons of the working class. The property has an area of about 12,390 square feet, and a frontage to Camberwell-green of about 82ft. For some years the property has not been used for the purpose for which it was acquired, and it is still vacant.

The Local Government Records and Museums Committee continue to receive proposals for the renaming of streets bearing German names. The latest is the request of the Stoke Newington Borough Council that Wiesbaden-road should be renamed Beatty-road. The Committee considered that a sufficient case for the alteration had been made out.

A housing scheme is being carried out at Tilbury by the urban district council. The average number of houses is only thirteen to the acre. The scheme has been prepared by Messrs Pepler and Allen, of Arundel-street, Strand, who are also supervising the work. The council have already begun the erection of 150 houses in the south ward as part of a larger scheme of 234 houses in all. An open space of 1½ acres adjoins the houses, and in addition the council have bought 48 acres close by for a recreation-ground and allotments.

An inquiry was held by Mr. P. M. Crosthwaite, M.Inst.C.E., Local Government Board inspector, at Asken, on Friday, into the application of the Doncaster Rural District Council for sanction to borrow £2,700 for the purposes of water supply for the township of Asken. Mr. H. M. Marshall, clerk to the rural council, explained that the area to be supplied was 850 acres, and the present estimated population was 3,140. The Asken Colliery Company had a further thirty houses in course of erection, and hoped to erect 150 more during the present year.

Corrente Calamo.

We agree entirely with Mr. Paul Waterhouse, who in a thoughtful paper in the "A.A. Journal" for March on "The Re-building of Belgium" argues that it is quite undesirable to attempt to further that by forcing English experts on Belgium, or by posing as instructors in town-planning. We can, indeed, as Mr. Waterhouse says, "make the mistake of thinking too readily that our Ruislips and Gidea Parks, our Hampsteads, and Letchworths are of importance as lessons." With the scheme afoot to provide Belgian architects at present in this country with opportunities of comfortably working out schemes of their own for such an exhibition as that for which University College is providing house-room we have all sympathy, and we hope it will not be exploited, as seems not impossible, "as a happy hunting-ground for English architects out of a job." Belgian architects want no "bossing" by us. Some of our town-planners have more to learn from them than they from us, and we should certainly feel inclined to go halves in Mr. Waterhouse's offer to bet that "in ten years' time the fare between Letchworth and Louvain will be as well worth paying by a Letchworth man as by a man of Louvain." Mr. Waterhouse's words of caution are timely, and needful.

Bristol, like so many other towns, is greatly in arrear with house-building. The *Western Daily Press* says: "Many years have passed—possibly many decades—since the difficulty of obtaining a small house was more serious than now. The sanitary committee meets each week and has before it a list of plans of proposed buildings, but very few indeed are residences, and the erection of houses to be let at £20 a year or less (the tenant paying the rates) appears to have come to a stop. We have heard people complain that they have walked through miles of streets where the dwellings are within their means, and not a vacant house could they find. Some change tenants without any notice board being exhibited. A whisper is heard through a friend, and the opportunity is seized. An advertisement from a suitable place brings quite a small crowd of applicants. What is to be the outcome of this state of things it is impossible to say. The shortage of houses is already serious, and, as time passes, it threatens to become worse. Nearly a thousand new houses are required in this city each year to provide for the natural growth of population, and private enterprise has almost ceased to make the provision required." We need hardly once again point out what the outcome will be. Towns that fail to house the workers will at no distant date find their industries suffer, and employers will have to pay higher wages. If private enterprise is not encouraged in this most needful direction, then, all the realm over, it will find itself hampered by the lack of labour, and general trade will soon suffer, possibly to an irremediable extent.

The London gas companies are rather promptly following the coal-vendors with a further rise in charges, the Gas Light and Coke Company leading the way with an increase of fourpence per thousand feet, which makes sixpence per thousand since the war began. We incline to think consumers

will want better reasons than are furnished as yet. Public authorities, which in not a few cases are still paying old prices on their contracts, although the hours of lighting have been materially reduced, will, we think, want to know why they have had no reduction hitherto corresponding to the considerably reduced freightage on the diminished quantities of coal burnt. An increase of twenty per cent. in less than six months will certainly dictate economy to all users, some of whom are suggesting that the gas companies are somewhat prematurely making their customers pay for the rather vigorous publicity campaign of the last year or two, in which its economy was held up as one of the chief inducements to substitute gas for coal. In the provincial towns, where gas is municipally supplied, we have noticed no such heavy additional charges yet, nor has the cost of the supply of electricity advanced in anything like the same proportion.

Perhaps the increasing cost of gas is the reason why people are starting to buy electric light shares which have been stagnant till now since the war broke out. Recent dividend declarations and reports have shown that the companies and the municipal undertakings have stood the strain fairly well on the whole, and consumers certainly have been well treated. We burn no gas for lighting, but the economy of gas-fires has been of pressure till late in the afternoon, while there has been no falling off in the electric light. If only a really efficient electric stove were available at a moderate cost we incline to think the gas-fire would not long trouble many people with the drawbacks that attend its use. Probably in no direction would enterprise prove more remunerative than in the popularising of electric heating, which would enable us economically and effectively to distribute warmth about our rooms where it is needed, and not centralised wastefully in that anachronism the fireplace, or in some awkward-looking insertion therein of the gas-substitute for the old coal fire.

Mr. Arthur Fell, M.P., Chairman of the House of Commons Channel Tunnel Committee, in view of the many inquiries received as to the present position of the project, has issued a statement in which the view is expressed that although the war has delayed the commencement of the tunnel, it has rendered the actual building of it much more certain. "It is too soon," the statement goes on, "to discuss the effect it would have had on this war. Whether the German advance on Paris would have been on the whole or partly diverted against Calais and the French defences at the mouth of the tunnel—whether the tunnel would have been captured and its flooding and interruption by us rendered necessary—how much permanent damage would have been done to it—these are all most interesting subjects, but they cannot be usefully discussed now. We can only take the results of the war as we have found them, and Calais and the French end of the tunnel and the railway from Calais to Paris, although threatened, have remained in the hands of the Allies. The tunnel could, therefore, have been used for the transport of our Expeditionary Army and stores, which it could have carried with safety, and the delay and expense of transhipment for the Channel voyage would have been avoided. How many millions of pounds this would

have saved us we cannot yet calculate. We hope that after the termination of the war the matter will be pressed forward without delay, and that this will be, it is hoped, one of the first great works begun when peace is made."

Mr. R. C. Carpenter, in the "Amer. Soc. Mech. Engin. Journal," XXXVI. p. 337, devotes large space to the history of the development of the process for burning pulverised fuel in cement kilns in the United States. Hurry and Seaman were the first to apply the new method successfully, in the years 1894-95, in the cement works of the Atlas Company. According to the author, no inventors prior to Hurry and Seaman had comprehended the essential condition of success for burning pulverised fuel in furnaces—namely, that the fuel must be burned completely while in suspension, and that the utilisation of the heat of combustion must be by radiation from the flame, and not by impingement of the flame on the bridge of walls of the furnace. The failure to recognise this condition of success is, he states, in a large measure responsible for the practical failure of the burning of pulverised fuel in boiler furnaces, although such furnaces, because of their form and proportions, render more difficult the problem of burning coal-dust in suspension. In practically all the devices which have been tried under boilers the flame has impinged on the bridge-walls or sides of the furnace, or on portions of the boiler, before the combustion was completed, with the results that fuel was wasted, capacity was reduced, and the linings of the firebox or other portions on which the flame impinged were destroyed. Since 1902 the use of pulverised coal for heating the rotary kilns has become general in the American cement industry, and operations and machinery used have become standardised. They are considered and described under the following headings: (1) Drying; (2) pulverising; (3) conveying; (4) storing; (5) feeding.

The damage caused to concrete structures by electrolysis, owing to the corrosion of metal embedded therein by stray currents of high voltage has been found in America to be productive of very serious effects, which it is believed can be minimised by the insistence by the architect or engineer on the use of properly-made paints on the surfaces of such metal. A variable series of experiments made by Mr. Henry A. Gardner, the Assistant Director of the Institute of Industrial Research, Washington, D.C., is communicated by him to the March issue of the *Journal of the Franklin Institute*. The conclusions arrived at are that the vehicle of such paints should contain: Boiled or bodied oils, or products which dry to a fairly saturated film. Oils which dry by semi-polymerisation rather than oxidation. Oils which dry to a flat rather than a highly gloss surface. The solid portion should contain a percentage of: Pigments which are coarse, and which therefore tend to form films having a rough surface. Pigments which are inert and which do not act as conductors of electricity. Pigments which are either basic or of the chromate type. The painted metal should be "sanded" if possible.

On the occasion of his marriage, Mr. A. J. Marshall, the borough engineer of Merthyr Tydfil, has been presented by the members of the office staff with a solid silver tea-service.

Our Illustrations.

THE INSTITUTE BUILDING, LIVERPOOL GARDEN SUBURB.

SELECTED DESIGN.

This building has been designed for a site adjoining Queen's-drive, the ring-road 108ft. in width recently constructed by the Liverpool Corporation. We give two views and a plan. It will be seen that on the ground-floor there is a hall, 76ft. by 30ft., opening on a verandah which will overlook the large recreation-ground in the rear of the building. There are also on this floor a billiard-room with two tables, a separate games-room, a reading-room, and a kitchen and offices. In the basement are the usual stores, and also a separate billiard or games-room which can be used for juniors. On the first floor, in addition to the gallery in the upper part of the hall, there are three club-rooms and the housekeeper's quarters, and a balcony overlooking the recreation-ground is provided over the verandah. The building is to be carried out with red brick dressings and a darker brick filling. The roof will be covered with hand-made dark red tiles. The architect is Mr. G. L. Sutcliffe, F.R.I.B.A., whose design was chosen in competition.

WROUGHT-IRON NEW RAILINGS, VICTORIA TOWER GARDENS, HOUSES OF PARLIAMENT, WEST- MINSTER, S.W.

It was originally proposed to continue the already existing railings along the additional great length of frontage consequent upon the extension of the Victoria-gardens beyond Abingdon-street along by the river embankment; but Mr. Lionel Earle, C.B., the Secretary of H.M. Office of Works, who takes great interest personally in every technical question that arises in connection with his Department, ultimately decided that it would be preferable to frankly work out the scheme on fresh lines instead of repeating the railings which belong to the time when E. M. Barry, R.A., had the Parliament Buildings in charge some while after the death of Sir Charles Barry, R.A. The design now completed is, therefore, advisedly different, constituting a departure from what was done before, as already mentioned, and accordingly the new work is separated from the railings of Barry's days by a massive stone pier, as shown by our right-hand photograph, as well as by the detailed drawings illustrated herewith. These illustrations explain quite clearly how the extension has been managed. The stonework was carried out by Messrs. Mowlem and Co., and the whole of the ironwork, including the bronze ornaments, bolted on the iron standards, were executed by Mr. D. J. Williams, of Carnarvon, who was practically discovered by the architect, Mr. Frank Baines, on the notable occasion when he was engaged upon his work at Carnarvon Castle in connection with the investiture of His Royal Highness the Prince of Wales. This work at Westminster is the first large contract intrusted to Mr. Williams in this way. He carried out the making of these railings at his smithy in Carnarvon. Mr. Baines found the smith's work done there was so much admired by many in Wales that he became desirous of introducing a considerable specimen of Mr. Williams's excellent craftsmanship into the Metropolis. Consequently, the accompanying drawings have an additional interest which is enhanced by the character of the work itself. Much attention has been attracted to the railings since they were fixed and finished, owing to their design and detail, due to Mr. Frank Baines, the principal architect in charge of the Royal palaces, etc. We are indebted to his courtesy for the loan of these copies of the working drawings and photographs.

"STONEDENE," ILKLEY, YORKSHIRE.

This house has recently been erected on the north bank of the river Wharfe at Ilkley, every room, except in the servants' quarters, having windows overlooking the fine view to

the south. The external walls are constructed of local stone and are cavity-walls throughout, the roof being covered with local flagstones. The contractor for the work was Mr. George Smith, of Ilkley, the house, together with the garden, being carried out under the superintendence of the architect, Mr. E. Brantwood Maufe, B.A.Oxon., A.R.I.B.A., of London.

NOTRE DAME DE DINANT.

The cathedral church at Dinant, in the Ardennes, is dedicated, as were so many of the churches of the Middle Ages, to Christ and the Blessed Virgin. The tiny town—it has only 7,000 inhabitants—is famous among English tourists by reason of its beautiful position on the Meuse at a point where the lofty cliffs come so close to the river as almost to squeeze the narrow street into the water. Against these grey cliffs the equally grey church nestles, and the tall tower at the west end surmounted by the typical Belgian "onion" final of wood covered with green slates made—till the Germans wrecked it all in September—a group which appealed to lovers of the purely picturesque qualities of architecture. The building, however, had other merits than these. Cruciform in plan, and vaulted throughout, it was one of the finest Gothic buildings in Belgium. It was almost entirely built in the 13th century of native limestone, and in many of its details, such as the circular unclustered shafts with octagon capitals, is reminiscent of Lisieux and other churches of Normandy. The vault is peculiar in the extreme concavity of the cells, the true cross-section from rib to rib being almost a semicircle, while, as will be seen from the sketch, the ribs spring in many cases from shields. Two lofty spires were contemplated at the west end, but these were abandoned, and the space between them carried up in the "onion" form which has become so famous. This, and the portals, and some of the vaulting, have now been destroyed; but the apse and the bulk of the nave and choir remain.

E. GODFREY PAGE.

WROUGHT-IRON GATEWAY, DONI- BRISTLE MANSION, FIFESHIRE.

Last week we gave a sheet of details illustrating the beautiful wrought-ironwork to the exterior staircase and terraces which form the approach to Donibristle House, a seat of the Earl of Moray. To-day, as promised, we include a measured drawing, also lent us by Mr. J. Scott Lawson, showing a majestic piece of smith's work forming the gateway which dates back to the beginning of the 18th century. Tradition states that this work was brought from Flanders and presented by William III. to Anne Countess of Moray, whose monogram it bears. The lofty double arch over the comparatively low gateway is of laurel leaves, and halved and riveted scrolls set in the arch, above which is a high pyramid-like extension with a lily-coronet and masks crowning the composition which contains a bold initial M in the centre. The various plans and notes on the drawing add very materially to the value of Mr. J. Scott Lawson's illustrations.

Mr. John James Haslam, late superintending engineer in the Public Works Department of India, has died at Wimbledon, in his 64th year.

The rural district council of Brigg has decided to apply to the Local Government Board for sanction to the borrowing of £2,408 for the erection of twelve workmen's dwellings in South Killingholme, and £2,416 for a similar number in Goxhill.

At Friday's meeting of the Holywell Board of Guardians the committee appointed to select furniture for the new infirmary, erected at a cost of £9,000, and offered by the board to the Government for wounded soldiers and sailors, recommended the purchase of furniture to the amount of about £550. The report was adopted.

At yesterday's meeting of the City Corporation, the Improvements Committee reported the award by a jury of £6,000 to Mr. C. G. Ashdown, for his sub-leasehold and trade interest in the upper ground floor of No. 56, Leadenhall-street, required for a street improvement. The claim had been £25,000, reduced before the jury to £15,429.

Building Intelligence.

CANNOCK.—A special meeting of the Urban District Council of Cannock was held on Thursday evening in last week to consider the report of the Housing Committee. The surveyor presented plans and estimates for the erection of houses at Belt-road, Hednesford, and in Beech Tree-lane, Cannock. The Hednesford scheme comprised eight pairs of houses of design A and four pairs of design B, the estimated cost of the same being £5,571 3s. 4d. If the houses design A were let at 6s. per week, and design B at 7s., there would be an annual loss of £15 on this scheme. The Cannock scheme comprised 10 pairs of houses, design B, at an estimated cost of £5,104 8s. 4d. If let at 7s. per week, a loss of £25 per year would be incurred on this scheme. If the council accepted the scheme, it would be necessary to apply for a loan of £10,675. After some discussion, in which the scarcity of houses in the district was emphasised by various speakers, the scheme was approved by the council, and it was decided to apply for a loan.

TILBURY AND MILLWALL.—To relieve congestion, the Port of London Authority have sanctioned the provision of a large amount of extra accommodation at its docks, including the construction of two sheds on the north side of the South-West India Dock, two sheds at the Tilbury Docks, and three additional floors to No. 1 warehouse, West India Dock, and the conversion of some disused covered sidings at the Millwall Dock into a shed suitable for the storage of goods. The total area of the new floor space will be 350,000 square feet, equal to a storage capacity of 35,000 tons, and the cost to the Authority will be £90,000. A large part of the new accommodation is due to be completed within three weeks, and the whole work will be finished within two months. Further, 50,000ft. of the new ferro-concrete sorting shed under construction at the Royal Albert Dock is now being brought into use for storage purposes. All of the works are of a permanent character.

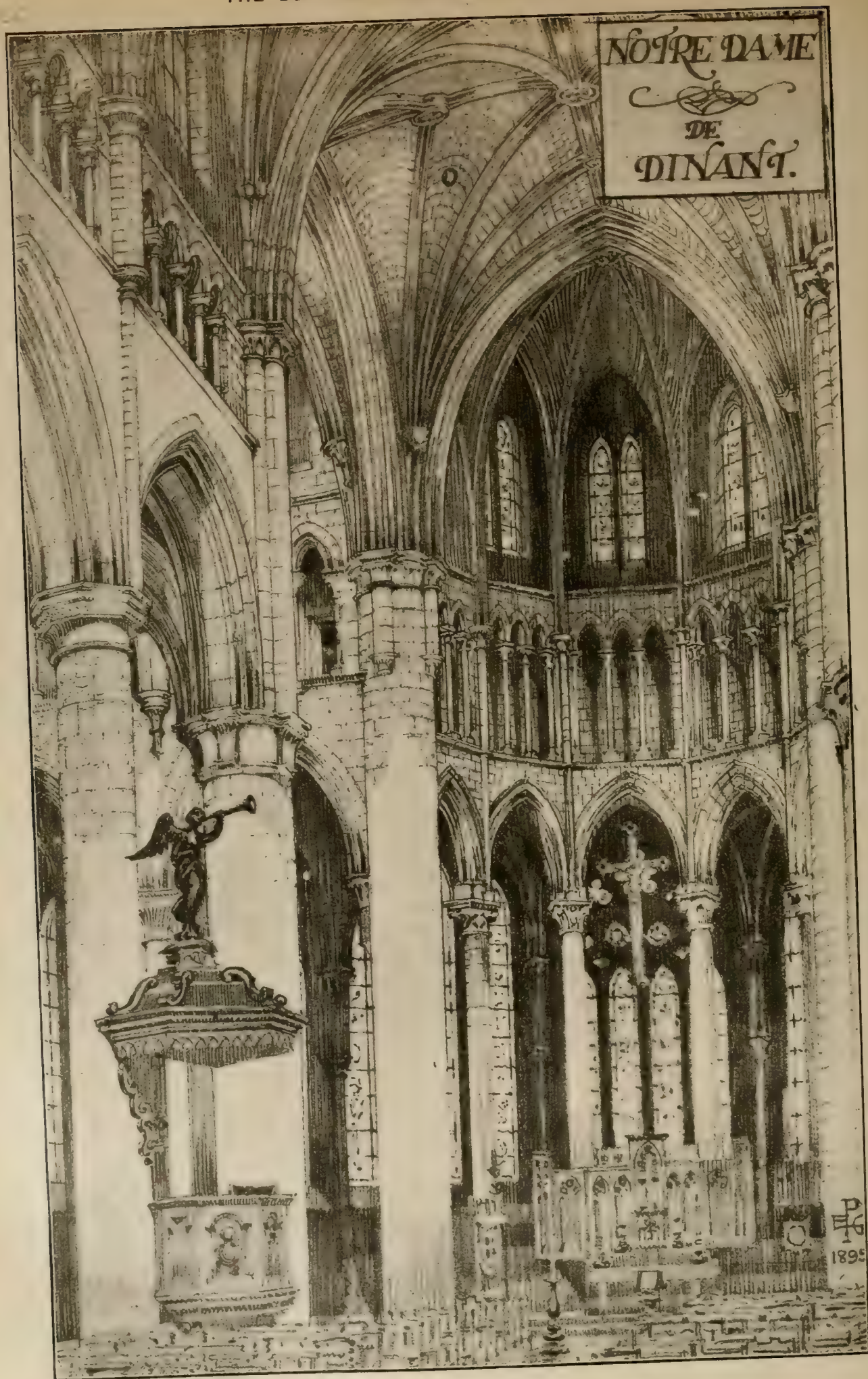
At Luton, on Tuesday, Mr. A. S. McNulty, an inspector for the Local Government Board, held an inquiry as to an application from the town council for sanction to borrow £5,320 for hospital extensions.

The urban district council of Highbridge and the parish council of Burnham Without having applied to the Local Government Board for permission to borrow £1,616 for the enlargement of the Highbridge Cemetery, Mr. W. O. E. Meade-King, M.I.C.E., an inspector under the Local Government Board, conducted an inquiry into the matter on Wednesday week at the Council Offices, Highbridge.

A collection of rubbings from monumental brasses in Kent formed by the late Canon R. Jenkins, of Lyminge, is now on view in Folkestone Museum. The earliest of the brasses represented is that of Sir Robert de Septvans, in Chartham Church. This dates from A.D. 1306, and is particularly interesting as showing the chain mail worn by the Crusaders in the reign of Edward I. There are only three or four brasses in England of a date prior to this.

The theatre of the Academy of Dramatic Art, between Gower and Malet streets, Bloomsbury, is approaching completion, so far as the carcass is concerned; but the fitting, furnishing, and lighting remain to be executed. It occupies an area of 114ft. by 52ft., the stage being 42ft. by 34ft., with a single gallery, the parterre being sharply raked, and the stage kept flat. Mr. Geoffrey Norman, of Messrs. Swan and Norman, 8, Clifford's Inn, E.C., is the architect; and Messrs. C. T. Kearley and Co., Ltd., of Great Marlborough-street, W.C., are the builders.

At the last meeting of the Staffordshire County Council, it was reported that the Bilston Urban District Council are about to commence the work of improving the Holyhead main road, Bilston, and in respect of which work the County Council have undertaken to be responsible for the repayment of principal and interest on any loan borrowed for the purpose. The committee recommended, and it was agreed, that application be made to the Local Government Board for their consent to the borrowing of the sum of £13,773 by the County Council instead of by the Bilston Urban District Council for the purpose.



From a Pencil Sketch by Mr. E. GODFREY PAGE, A.R.I.B.A.



THE BUILDING NEWS, MARCH 19, 1915







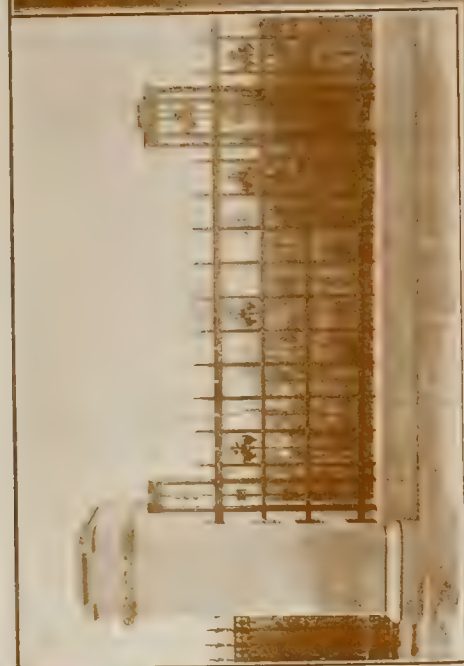




VICTORIA

TOWER GARDENS

NEW RAILINGS



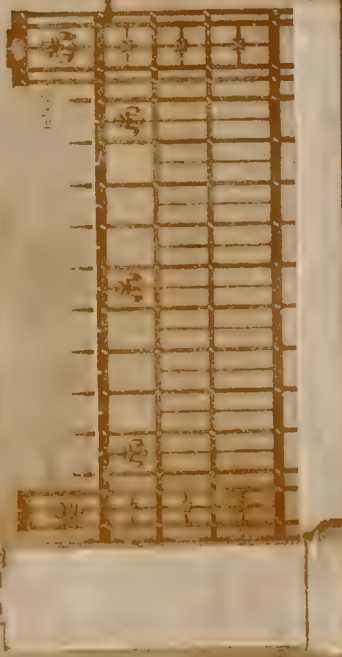
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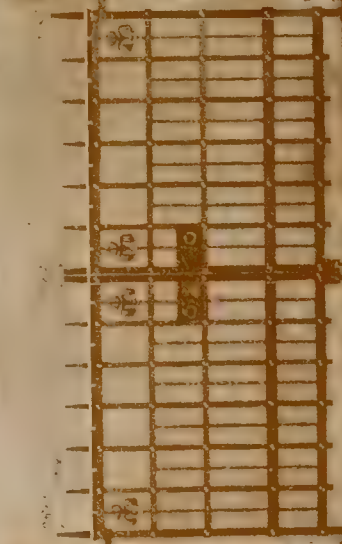
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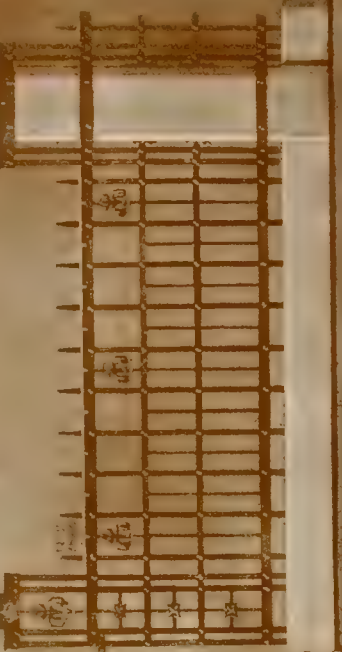
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TYPICAL BAY AND STANDARD



ELEVATION OF GATES



TYPICAL STANDARD BAY, INTERMEDIATE PIER



SCALE OF 1/4" = 1' 0"

GENERAL VIEW OF GATES AND PIERS

DESIGNED BY
J. M. OFFICE OF WORKS
WESTMINSTER S.W.

WROUGHT IRON NEW RAILINGS, VICTORIA TOWER GARDENS, HOUSES OF PARLIAMENT, WESTMINSTER, S.W.
J. M. OFFICE OF WORKS, Architect.

THE BUILDING NEWS, MARCH 19, 1915.

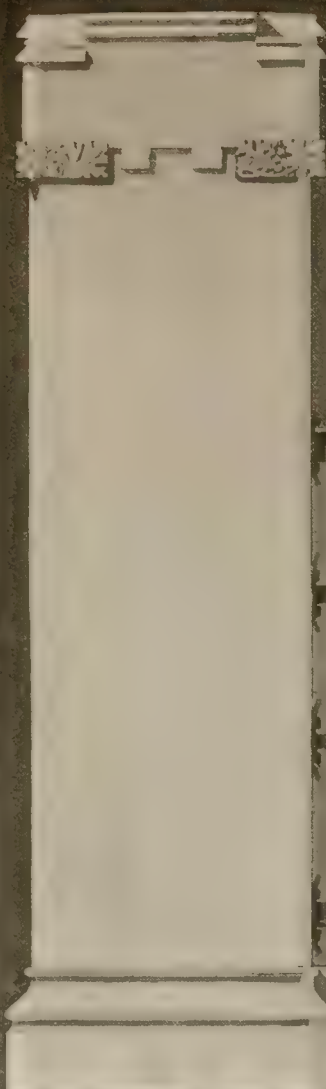






VICTORIA TOWER NEW RAILINGS

STONE CARVING ON MAIN PIER



BRONZE ROSE



BRONZE SHAMROCK

EMBLEMS FIXED IN
CENTRE OF TOPS OF
WROUGHT STANDARDS



1 1/2" X 7/8"

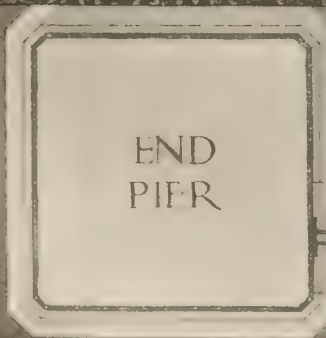
1/2" X 1"

HAMMER MARKS
ON ALL WORK



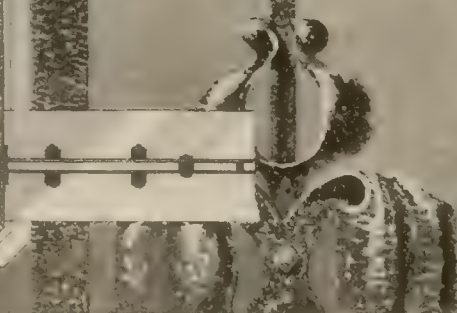
BRONZE

IRON



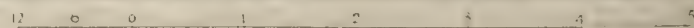
END
PIER

3 1/4" X 1/2" DOUBLE



DETAILS

SCALES



WROUGHT IRON NEW RAILINGS, VICTORIA TOWER GARDENS, HOUSES OF PARLIAMENT

GARDENS EXTENSION GATES



STONE CARVING ON WALL

IRON AND BRASS
RAILING IN BRICK
WORK AND STONE

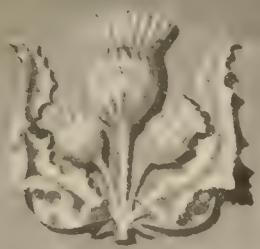


IRON AND BRASS RAILING IN BRICK WORK AND STONE

IRON AND BRASS RAILING IN BRICK WORK AND STONE



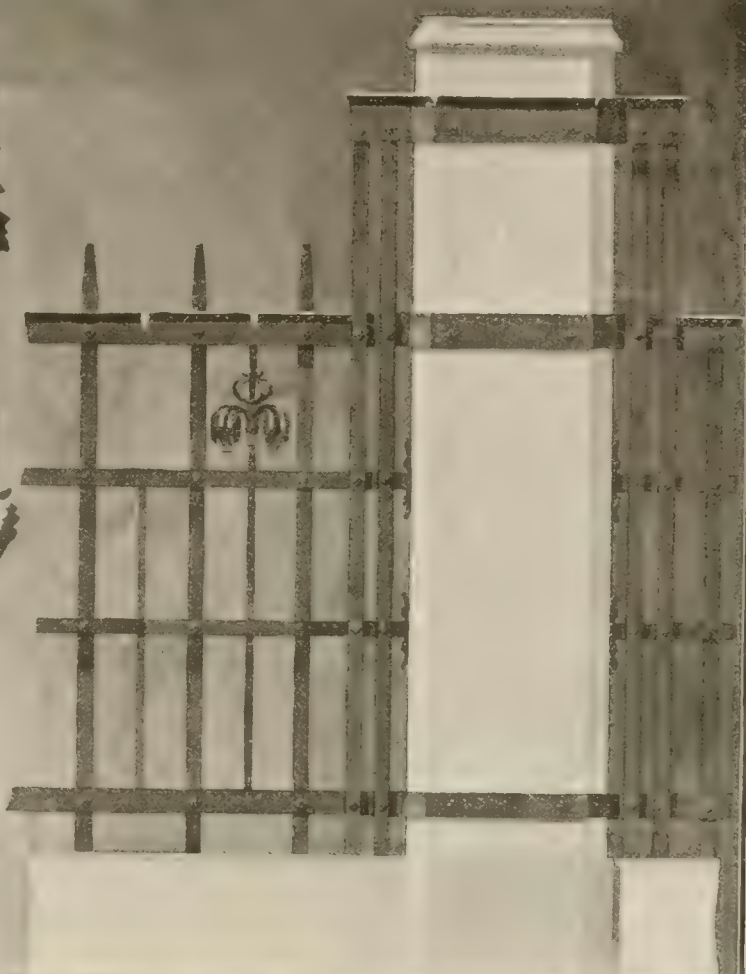
IRON AND BRASS RAILING IN BRICK WORK AND STONE



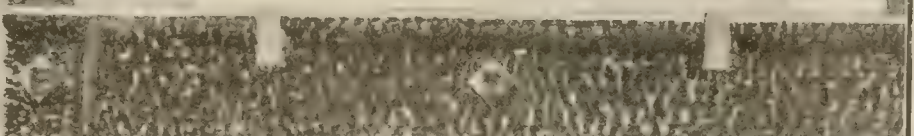
BRONZE THISTLE



BRONZE DAFFODIL

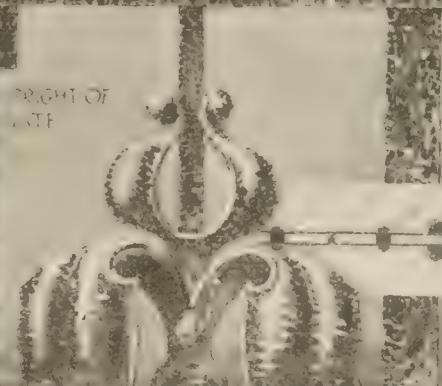


24' x 2'



UPPER HALF

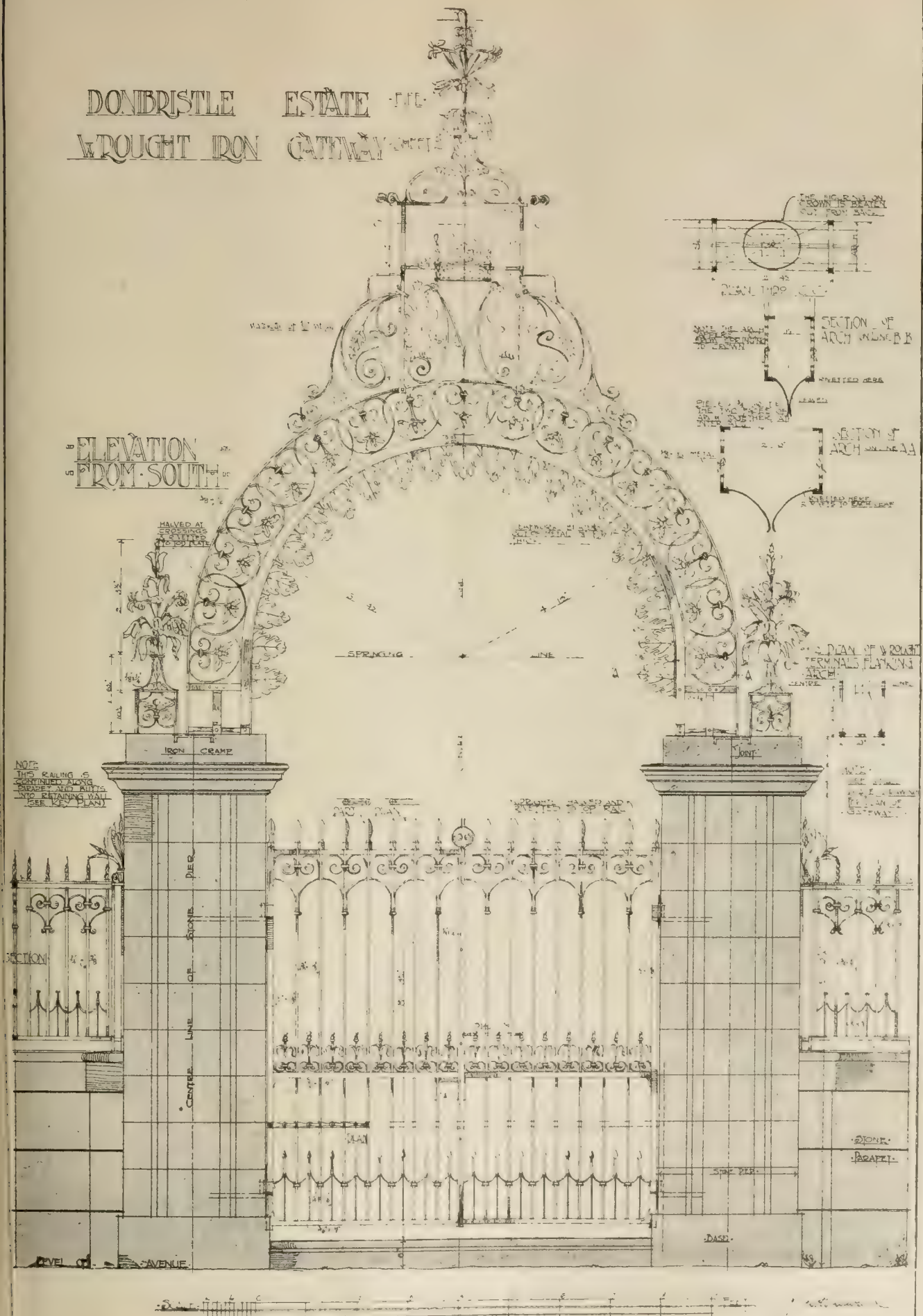
HEIGHT OF GATE



STONE
PIER

FRANK BAINES
F.D. LORRICK
WESTMINSTER, S.W.

DONIBRISTLE ESTATE THE WROUGHT IRON GATEWAY



WROUGHT IRON GATEWAY, DONIBRISTLE MANSION, FIFE, N.B.
Measured and Drawn by Mr. J. SCOTT LAWSON.

OBITUARY.

Mr. Walter Crane, the versatile and clever decorative artist, designer, book-illustrator, author, and Socialist lecturer, whose sudden death occurred at the Cottage Hospital, Horsham, on Sunday night, was one of the leading spirits of the Mid-Victorian movement against conventionalism in art. Born at Liverpool in 1845, the second son of Thomas Crane, a Chester miniaturist, who was then the secretary and treasurer of the Academy, he was in his seventieth year. At the age of twelve he determined to be a painter, influenced to this decision by a visit to the Royal Academy, and the perusal of Ruskin's "Elements of Drawing," and during the next two years profited by the training of his father, who was then in failing health. Thomas Crane's illness and death plunged the family into poverty, but W. J. Linton, the wood-engraver, took the boy as an apprentice without premium, and the influence of this work was apparent in all his subsequent drawings. In 1862, at the age of sixteen, Walter Crane had the satisfaction of seeing his small oil-painting, "The Lady of Shalott," hung at the Royal Academy, and, better still, of finding an appreciative purchaser. His art was greatly influenced by a number of Japanese colour-prints, given him by a lieutenant in the Navy. He became a frequent contributor to the Dudley Gallery, the Royal Institute of Painters in Oil and Water-Colours, and from its opening to the Grosvenor Gallery, his first work there shown being "The Renaissance of Venus," afterwards purchased by G. F. Watts, and now in the Tate collection. His greatest conception, "The Bridge of Life," was one of the works shown at the Grosvenor—the cartoon was reproduced in the *BUILDING NEWS* for January 2, 1891. Another important decorative work, "The Triumph of Labour," appeared in our number for May Day, 1891, with a descriptive poem by the artist. One of his latest commissions was to fill with pictures the lunettes of the Bristol Art Gallery, recently built from the designs of Mr. S. S. Reay; two of these cartoons, those emblematising "Painting" and "Craftsmanship," were published in our New Year's issue, January 2, 1914. It must be admitted that his colour-perception, originality, and forcefulness were always far inferior to his powers of draughtsmanship and sense of line and form. Among his book illustrations may be noted those for works by Robert Louis Stevenson and Oscar Wilde, and the long and varied series of toy-books which have delighted several generations of children and their parents. He appreciated greatly the honour of an invitation, given three years ago, to paint his own portrait for the Uffizi Gallery at Florence, the result being a characteristic and life-like half-figure. Walter Crane's output of work in many fields of decorative art was prodigious. He designed "The Goose Girl" and other cartoons, to be worked out in arras tapestry, for William Morris; many wall-papers, including the charming "Woodnotes" design for Messrs. Jeffrey and Co., and illustrated in our issue of March 25, 1887, and the equally attractive "Peacock Garden" for the same firm, given by us December 20, 1889; inlaid wood flooring for the South London Art Gallery, Peckham-road, illustrated in our pages, April 24, 1891. We have also reproduced in our pages some of his designs for plaster decoration, chimney-pieces, and furniture. He was widely known as a lecturer on the applied arts, and also as a political reformer of advanced views. He was the founder in 1888, and for many years president of the Arts and Crafts Exhibitions. For many years he acted as Examiner in Design to the Board of Education. From 1893 to 1896 he was Director of Design at the Manchester School of Art, and afterwards was Hon. Art Director at Reading College for a short time, and for less than a year (1898-99) held the exacting post of principal of the Royal College of Art, South Kensington. We published his portrait in our issue for April 25, 1890. Mr. Crane married in 1871 Mary Frances, daughter of the late Thomas Andrews, Hempstead, Essex; Mrs.

Crane's tragic death on the railway last Christmas will be remembered. They leave a daughter, two sons, one of whom, Mr. Lionel Francis Crane, is a Licentiate of the Royal Institute of British Architects.

Second-Lieutenant Cyril F. Austin, who was killed on March 10, was a member of Reuter's editorial staff. He went to the front in December as a member of the Artists' Corps, but was soon promoted to a commission in the 2nd Queen's. He was married a fortnight ago to Miss Margaret Russell, daughter of Mr. S. B. Russell, F.R.I.B.A., of Gosmore, Herts. He came home on a flying visit for the wedding and returned to duty on the day following. Amid the many bereavements brought about by this cruel war the sympathies of all will, we are sure, be with the bride thus made a widow within fourteen days.

CHIPS.

The urban district council of Spalding have approved of revised plans of sewage-disposal. The estimated cost is £38,000 for the past 3½ years.

The Southend-on-Sea Town Council have decided to build a police-station and cells on a site in rear of the Leigh Urban District Council Offices, at an estimated cost of £1,100.

The statue in marble of King Edward in Coronation robes will be unveiled in the public gardens of Karachi in April. It is placed on a marble pedestal, with subsidiary groups in bronze, and is the work of Mr. Hamo Thornycroft, R.A.

Mr. Henry W. Rogers, one of the pioneers of architectural practice in New England, died at his home in Lynn, Mass., on January 30, at the age of 85 years. Mr. Rogers is survived by a wife and two sons. The sons are both in the practice of architecture, Mr. Hamilton E. Rogers, at Lynn, Mass.; and Mr. Clarence A. Rogers, in New York.

The Local Government Board have given authority for the preparation of two further town-planning schemes, under the Housing and Town Planning Act, 1909. The schemes are authorised to be prepared by the Corporation of Neath and the Urban District Council of Sidmouth, and relate to areas of about 270 and 1,236 acres respectively.

The new schools at Little Drayton, Salop, have just been opened. The buildings, which have cost £6,000, were designed by Mr. George H. Bailey, architect, of Shrewsbury, and Mr. H. Dorset, of Cradley Heath, is the builder. Accommodation is provided for 480 scholars. Provision is made for cookery and laundry instruction for girls, and tuition in carpentry and manual work for boys.

Mr. Allen S. Walker, in the course of a lantern lecture at the Young Men's Christian Association, Tottenham Court-road, on Monday, said that Rheims Cathedral had been photographed practically inch by inch by a photographer who loved the structure, and any restoration of the building would only be possible from these photographs, as no other detailed record had been preserved.

A meeting of the Executive Committee of the Warwickshire King Edward VII. Memorial Committee was held at the County Hall, Warwick, on Friday. Plans of the Memorial Sanatorium proposed to be erected on Hertford Hill, near Warwick, submitted by the Warwickshire and Coventry Joint Committee for Tuberculosis, were considered, and approved on behalf of the Warwickshire Memorial Committee.

An experiment is being made for road-making with a material that heretofore has been a waste product of glass factories. This is a thick syrupy liquid that hardens when exposed to the atmosphere, forming a substance that somewhat resembles glass. A quantity of this material has been mixed with crushed stone and used to surface a stretch of highway in Illinois, forming a surface that is as smooth as concrete.

Graveney Parish Church, Kent, which has been under restoration, from Mr. W. D. Caroe's plans, for nearly a year, was reopened on Monday week; £1,150 has been expended on the work, and the fabric is now in sound condition, though much remains to be done inside, including the levelling of the floor, renewal of the seating, improvement of the heating, and the erection of a vestry screen, etc. For these purposes about £600 will be required. The 15th-century timbered roof, which was not visible, has been taken to pieces, renewed where decay rendered it necessary, and re-erected.

PROFESSIONAL AND TRADE SOCIETIES.

ASSOCIATION OF LOCAL LANDS VALUATION ASSESSORS FOR SCOTLAND.—The annual meeting was held in the County Buildings, Edinburgh, on Friday, Mr. T. Smith Peace, Kirkwall, presiding. There was a large attendance. The following office-bearers were elected: President, J. R. Newlands, Musselburgh; vice-president, Alexander Walker, Ayr; treasurer, R. D. Tannahill, F.S.I., Kilmarnock; secretary, James Smart, F.S.I., Edinburgh. Committee: Messrs. Alexander Walker, F.S.I., Glasgow; A. C. White, Ayr; W. Park, Hawick; R. Y. Maxtone, Campbelltown; D. J. Carnegie, Forfar; W. H. Williamson, Peebles; and T. Smith Peace, Kirkwall. Papers on various questions affecting valuation and registration were read and discussed. The members afterwards dined in the Caledonian Station Hotel.

THE BENEFICIAL POWERS OF THE TOWN-PLANNING ACT.—In his lecture at the Birmingham University, on Friday, on town-planning, Mr. Barry Parker, F.R.I.B.A., gave an exposition of the powers conferred on borough, urban, and rural councils by the Town-planning Act, and the procedure under that Act, and mentioned that these powers were conferred with the general object of securing proper sanitary conditions, amenity, and convenience. He pointed out that the town-planning scheme need not, without reason, be limited to the area of the authority preparing it, and said that the Act empowered the town-planning authority, provided they gave proper compensation, to pull down existing buildings which interfered with the carrying out of the scheme. An important power conferred was that to pull down, without giving compensation, any buildings erected after application had been made to the Local Government Board for power to prepare a town-planning scheme. The position of a local authority who had not made use of the powers conferred upon them by the Act was that they could not decide the direction any new street should take, that they must pass the plan and permit the erection of any house which conformed to their by-laws, even though they knew it to be unsuited to the neighbourhood, and would have to come down for a street widening in the near future. Because their powers were so limited, they laid up untold trouble and expense for themselves in the future, in the form of costly improvements. He declared that on every hand they found a serious depreciation of the value of property taking place on account of factors preventable under the Town-planning Act, and that many estates developed with good houses were ruined by adjacent property being cut up for crowded cottages, shops, or factories, skating-rinks, or cinematograph palaces. The Act, he added, provided that the landowner, and everyone interested, shall be consulted at every stage, and given every opportunity for making sure the scheme was prepared in the best interests of everyone. Many town-planning schemes, notably those promoted by the Birmingham Corporation, were being promoted in the spirit of give-and-take, and by offering inducements to landlords to fall in with the schemes.

GLASGOW.—A meeting of the Glasgow Royal Technical College Architectural Craftsmen's Society was held on Friday, 12th inst., when Mr. J. A. T. Houston gave a lecture on English and French wrought-iron work. Starting with a short history of architecture, the lecturer traced the evolution of the art of wrought-iron, showing how the several architectural periods had each a well-defined effect on artistic iron-working. The lecture was illustrated by slides showing many fine examples of the art in Italy and France, notably at the Louvre and Versailles. Types of English work were also shown and the importance of the influence exercised on iron-working by Inigo Jones, Wren, and Adam was emphasised.

ROYAL SCOTTISH ACADEMY.—At the annual meeting of this body, held in Edinburgh, the office-bearers elected and the

council for the ensuing year were declared as follows:—Council: Sir James Guthrie, president; Messrs. John Kinross, C. Martin Hardie, W. G. Stevenson, William Walls, Sir John J. Burnet, F.R.I.B.A., Hippolyte J. Blanc, F.R.I.B.A.; Mr. W. D. McKay, secretary; Mr. Hippolyte J. Blanc, treasurer; Mr. James Paterson, librarian; Mr. Mr. A. K. Brown and Mr. G. Washington Browne, architect, auditors; Mr. John Kinross and Mr. C. Martin Hardie, curators of library; Messrs. Robert McGregor, E. A. Walton, William Walls, Edwin Alexander, visitors of Academy's School of Painting; Messrs. J. L. Wingate, W. Birnie Rhind, John Kinross, Sir Robert S. Lorimer, F.R.I.B.A., and James Cadenhead, Art College representatives.

SHEFFIELD.—An interesting comparison of the cathedrals of Amiens and Salisbury—two contemporaneous buildings which are frequently regarded as typical of the Gothic architecture of France and England respectively—was given to the members of the Sheffield Society of Architects and Surveyors last night by Mr. J. R. Wigfull. Mr. A. F. Watson presided. The lecturer said it was often claimed that Gothic architecture originated in France, and that England borrowed it; but later investigation seemed to show that there was a separate development in each country. The English might have borrowed from the French to a slight extent, but not in the wholesale manner that had been suggested. With the assistance of a series of beautiful slides from his own photographs, Mr. Wigfull took his hearers in detail through the two cathedrals, comparing the buildings externally and internally. They were both commenced in the year 1220, and they are practically the same length, but the width and height of Amiens are very much the greater of the two. Mr. Wigfull was heartily thanked, on the motion of Mr. J. B. Mitchell-Withers, seconded by Mr. W. J. Hale, supported by Councillor Fenton and Mr. H. L. Paterson.

COMPETITIONS.

CLEVELAND PUBLIC LIBRARY.—Seven selected architects will be invited to enter the competition for the proposed 2,000,000dol. public library to be erected in Cleveland, Ohio. Professor A. D. F. Hamlin, of Columbia University, is the professional advisor. In addition to the central library, the scheme will include two branch library buildings.

GLASGOW.—Additional buildings are about to be erected in connection with the Gartlock Asylum to give accommodation for 300 inmates, and the Glasgow Parish Council are about to invite architects to submit plans in competition for the work.

The American Society of Landscape Architects has chosen as president James Sturgis Pray, chairman of the school of landscape architecture at Harvard. Until recently Professor Pray was president of the Boston Society of Landscape Architects, which has just become a chapter of the American society.

The scheme for the improvement of the central area of Dundee is the subject of a report issued by Mr. James Thomson, city architect. He estimates the capital expenditure at £170,000 for the purchase of properties, and £100,000 for the erection of new buildings and a public market, making £270,000, irrespective of the £100,000 gifted by Sir James Caird for a public hall.

The boring operations for water carried on by Mr. Percy Griffiths, a London engineer, at the instruction of the Howden Rural District Council, has thus far proved very satisfactory. It is reported that there is an abundant supply at Newbold, on the Yorkshire Wolds. The council have, however, decided to suspend operations during the war, owing to higher prices of material and shortage of labour.

At Droitwich a provisional license has been granted for a new hydropathic establishment in Corbeto-avenue, now in course of erection. Accommodation will be provided for 200 guests, the estimated capital outlay being nearly £30,000. Brine baths and a set of Turkish baths will be installed, and the building will be lighted by electricity and provided with electric lifts and outside iron staircases.

Correspondence.

BARTON OR MANOR-HOUSE.

To the Editor of the BUILDING NEWS.

SIR,—I think I am right in saying that the lord of a manor possesses rights to pursue game, and also to minerals, on a barton that does not belong to him. For instance, I possess two manors, that of Lew Trenchard and that of Waddlestone. The barton of Orchard is in the former manor, and my forefathers always exercised the right of shooting and hunting over it. It belonged to the family of Wood, who had a handsome house there in 1620. They are gone now, and the barton is mine. In Waddlestone are two fields that do not belong to me, but as they are in the manor I would have a right to shoot over them. In the adjoining manor of Sydenham I possess a feson or barton. But as the Hon. Mrs. Tremayne is lady of the manor she has the first shoot of the season over it, and could claim more if she chose.—I am, etc.,

S. BARING-GOULD.

Lew Trenchard, North Devon.

SIR,—The difference between a barton and a manor appears to be a matter of legal archæology, which an architect naturally approaches with diffidence.

After consulting a number of dictionaries, ancient and modern, the following conclusion seems to emerge: Barton is a word in use in certain districts, Devonshire in particular, to describe the demesne lands of a manor. It is not a term known in these parts, nor, apparently, is it known to lawyers generally. Having found that a barton stands for the demesne lands of a manor, it is interesting to learn that the demesne lands were those which the lord of the manor kept in his own occupation, as distinguished from those which he let to tenants. The demesne, demain, or domain, would therefore appear to be primarily the land round the manor-house occupied and enjoyed by those living therein; and barton would have much the same meaning: hence, no doubt, its restricted use in some localities as denoting the farmyard.—I am, etc.,

J. A. GOTCH.

Kettering, March 15, 1915.

UNHEALTHY SCHOOLS.

SIR,—I note that those who profess to believe in cross-ventilation never seem to tire of decrying mechanical ventilation, though it is not so very long since school boards swore by that system.

May I point out that when school authorities are appointed they are expected to promote the interests of the scholars in a reasonable manner, and not to exploit them by an over-indulgence in haphazard experiments with doubtful schemes of ventilation.

For instance, when they employed warm-air systems with closed windows, upon which enormous sums were lavished, the very mention of natural ventilation and cold air made them shudder. Yet, when their fancy changed, they at one bound vaulted to the very opposite extreme, cold air and open windows costing nothing.

These acrobatic quick-change performances may be very interesting as an exhibition of hygienic gymnastics, but they don't make for efficiency. The plain fact is, they got into a panic and tried to retrieve themselves at the expense of the children by resorting to a plan that cost them nothing. That is the whole case in a nutshell; the children were again exploited to save their faces.—I am, etc.

Birmingham.

J. T. BENTLEY.

SIR,—Taking an interest in all questions relating to public hygiene, I have watched with mixed feelings the controversy that has raged in your columns for the past three months, a record time, I should think, for any sanitary discussion. Reprints and reviews of your leader under the above head-

ing have been received by me from time to time from various parts of the kingdom, and also from the United States, where it seems to have attracted even greater attention than here; but I observe that they nearly all, as also several of your correspondents, make the mistake of thinking that in condemning cross-ventilation you suggest that mechanical is preferable. This misunderstanding can only have arisen from a too hasty reading of your article, as the following extract therefrom will show:

"After several tests in schools ventilated on each system, it was clearly demonstrated that in none of the schools examined and ventilated mechanically by extraction—even in a new school opened for a week or two—was the air found to be more pure than in those examined and ventilated naturally without any mechanism.

"Draughts existed in the upper levels of every room ventilated mechanically by extraction, while the halls of such buildings were generally full of draughts."

"The experience gained by visiting several schools where the 'Plenum' system is installed tends, even then, to the conviction that complete freshness is only assured when mechanical methods of changing the air can be supplemented by 'natural': otherwise a stale, stuffy smell is unpleasantly perceptible to sensitive nostrils."

I also observe another rather curious misapprehension to the effect that though you point out the evils of cross-ventilation, you omit to suggest any better plan. That this is not so the following extracts prove:

"It seems to us that Nature points unerringly to the only practical and satisfactory solution of this question, and that is, to change the air in the classrooms in accordance with the natural laws which control the movement of air, and, as warm vitiated air ascends, to withdraw it at the higher levels of the room, the fresh-air supply being provided at the lower levels, distributed in such a manner as to avoid draughts. . . .

"When the temperature of the air in a classroom is from 60 deg. F. to 65 deg. F., the air is expelled from the lungs at a temperature of from 85 deg. F. to 90 deg. F., and, along with the heated exhalations from the body, ascends to the upper parts of the room, from whence it should be drawn off, and not permitted to return to be re-inhaled. . . .

"The extraction should, therefore, always be from above, which may easily be effected by the intelligent utilisation of the powerful, and inexhaustible, natural forces which are continuously at work, owing to the never-ceasing movement which exists in the atmosphere, and without the aid of costly mechanical appliances, which have not been found in actual practice to be so efficient, or reliable, as natural ventilation scientifically applied."

As I understand it, cross-ventilation consists of the external air passing into a room in an upward direction through specially arranged window-openings, and descending from its gravity to breathing level, is supposed to be expelled through corresponding openings in the opposite windows. If this is so I cannot see but that the ascending expired air is forced down by the descending current, and perforce rebreathed before expulsion.

The lower parts of classrooms occupied by the scholars being below the ventilating openings must, unless the downward current of cold air was very strong indeed, in which case a disagreeable, if not dangerous, down-draught would be experienced, form a reservoir or well of comparatively stagnant foul air, as the cold and denser air above would to an extent act as a sort of lid or cover, obstructing the effective removal or dispersal of the foul air, warm exhalations from the body, and aqueous vapour arising from respiration.

Such conditions would prove unhealthy for the scholars who occupy a sitting posi-

tion at a low level, though at a higher level, say even the height of an adult teacher standing, the air might be comparatively pure, have freer movement, and feel altogether fresher and more invigorating. With cross-ventilation it is, therefore, the children, from their position, who suffer most, and the teachers least, so far as the foulness of the air is concerned. There might, in fact, be quite a brisk current blowing across the classroom from one set of window openings through those on the opposite side without the lower stratum of air in which the children are being very much affected, as from the principle on which cross-ventilation acts that stratum, or breathing zone, must always be more or less stagnant and foul owing to the vertical compression caused, in cold weather especially, by the weight and pressure of the blanket of cooler and denser air above.

This is the rock upon which all these down-draught systems are wrecked; let the air supply be cold or hot, the ascending heated foul air is in each case retained for rebreathal. This defect is so vital, indeed, as to constitute an insuperable bar to the adoption of down-draught ventilation in all buildings occupied by human beings or by animals, the latter being quite as sensitive to foul air and draughts as humans are.

The accepted authorities on the subject are indeed unanimous in regard to this, and I think most unbiassed people will agree with that very high authority, Professor Simpson, when he says "a draught is not ventilation"; therefore, as cross-ventilation seems to consist of draught, it cannot be accepted as a desirable method, particularly for schools; but if the Staffs Education Committee, who, I gather, are the originators of that arrangement, would be so good as to point out in your columns (as one cannot, of course, conveniently go to Stafford) wherein cross-ventilation has been misjudged, their statements, I feel sure, would be received with that respectful consideration which is only the due of all who take an interest in the important question of ventilation. It would also bring this correspondence to a speedier conclusion.—I am, etc.,

R. LENNOX-GORDON.

Minstead, Lyndhurst, Hants.

SIR,—The supporters of cross-ventilation may, as "Crusader" says, be only making "confusion worse confounded" by their illogical attempts to bolster up that method against the strong blast of public disapproval which is blowing against it with ever-increasing force; but Mr. Wynne Thomas carries off the palm when he gravely assures us that with cross-ventilation purity of the air need not be too closely considered, as the principal object of that system is to keep the scholars cool. Not a difficult thing to do, I should say, with a north-easter blowing through the classrooms, or, as another supporter describes it, "a perfect tearing blizzard," which still another supporter advises should be borne "until the maximum point of endurance is reached."

Mr. Thomas further assures us that cross-ventilation promotes activity of the body. I should say it did, as otherwise few of the unfortunates subjected to its gentle influence would survive.

This "activity" is, I presume, the restlessness referred to in your article as inseparable from sitting in a heated atmosphere, which we are told is an essential of cross-ventilation, with a shower-bath of cold air precipitated from above, as another essential.

Spartans must henceforth take a back seat with the participants of this plan: they are simply "not in it." Mr. Thomas informs us that "The great fault nowadays is the desire to live in rooms that are warm, and consequently unhealthy." How foolish it seems to waste money on coals when it is so much healthier to freeze; an appropriate motto for "fresh-air-at-any-price enthusiasts" would be "cold and healthy, warm and ill."

How does Mr. Thomas reconcile his theory of coolness with the statement in his first

letter that with cross-ventilation the classrooms are highly heated, and in proof of this gives the actual figures so that there may be no mistake as to the temperature provided? The advocates of cross-ventilation cannot have it both ways, and they seem not to know which way they want it, nor which way it is. In their anxiety to now prove that there is no draught, though, as they have themselves stated, cross-ventilation consists of through-draught and down-draught, they condemn it as inoperative, and if they admit the draught, then why in the name of common-sense and humanity inflict it upon the schoolchildren if down-draught is the "crying evil" that Mr. Thomas asserts it is? In doing this they are neither logical nor consistent. The authors of this plan, who, we are informed, are the Staffs Education Committee, evidently consider that in so far as their advocacy of it in your columns is concerned, which up to now is nil, discretion is the better part of valour, which doubtless is due to the knowledge that the damning indictment brought against it is unanswerable. They have, however, achieved the unenviable distinction and incurred the grave responsibility of introducing the most baneful and senseless travesty on ventilation that the mind of man could conceive, and have brought the whole question of ventilation into discredit, which must do infinite harm to the cause of health by the distrust engendered.

It is, indeed, nothing less than a public scandal that the fantastic fads of irresponsible extremists should be allowed to destroy the health and comfort of schoolchildren by enforcing cross-ventilation upon them in cold weather. Such a very heartless proceeding ought to be made an indictable offence as a crime against the community, which it most undoubtedly is, but a day of reckoning is surely approaching for those responsible, when they will be called to give an account of their stewardship before a Royal Commission, which may be sooner than they think.—I am, etc.,

CALORIC.

The R.I.B.A. problems in design submitted under Subject XIX. will be on view in the Galleries of the R.I.B.A., on March 22, 23, and 24, between the hours of 10 a.m. and 8 p.m.

An extension of the free library at Shirley, a suburb of Southampton, was opened by the mayor on Friday. The plans were prepared and the work supervised by the borough engineer of Southampton, Mr. Crowther, and the contractor was Mr. Douglas, of that town.

At a meeting of the Historic Society of Lancashire and Cheshire held at the Royal Institution, Liverpool, on Friday night, Dr. Philip Nelson, F.S.A., described various Mediæval alabasters in the vicinity of Liverpool, tracing their source and distribution in the Middle Ages. The alabaster was quarried at Chellaston, Derbyshire, and carved at Nottingham, from whence the panels were exported to places as remote as Iceland and Italy. The author illustrated his remarks by numerous slides and actual panels from the Liverpool Museum and his own collection.

Mr. William Brass, of Abchurch-lane, E.C., and Brunswick-terrace, Brighton, builder and contractor, who died on Nov. 23, 1913, has left £584 9 18 19s. 5d. The legacies include £250, the household effects, and during widowhood £2,000 a year to his wife; £250 each to his son William and his daughter C. I. Brass; £250 each to the executors; £1,000 each to Edie Bassett, H. Brass, Clara Kennedy, S. Walker, and G. Bland; his flat in Coventry-street and the furniture to H. Brass; and £100 each to A. Boltz, H. Colls, Jim McMillan, and J. C. Bell. The residue is to be held in trust for his children.

The Victoria and Albert Museum has received on loan from the rector and churchwardens of the City church of St. Augustine with St. Faith, Old Change, a splendid array of silver-gilt plate, which has been placed on exhibition in the Loan Court, Room 40. It comprises two groups, representing the two old parishes now united in a single benefice, and includes seven flagons of varying sizes, three Communion cups, with their paten-covers, and a few minor objects. Of the principal pieces, one—a Communion cup—is of the reign of Elizabeth, and the others range over the reigns of James I., Charles I., and Charles II.

LEGAL INTELLIGENCE.

AFFAIRS OF A STOKE-ON-TRENT BUILDER.—A meeting of the creditors of Mr. William Ball, builder, was held at Stoke-on-Trent on Wednesday week, the Official Receiver (Mr. F. T. Halcomb) presiding. A receiving order was made on the 24th ult. on the debtor's petition, and up to the present thirty-six proofs of debts had been lodged by creditors. The debtor's statement of affairs showed gross liabilities £21,968 13s. 10d., the amount estimated to rank for dividend being £2,204 8s. 8d. The debtor estimated his assets to produce £8,529 3s. 2d., and after deducting £96 3s. 2d. for rates, taxes, etc., there was an estimated surplus of assets over liabilities of £6,228 11s. 4d. The debtor did not admit he was insolvent. If he were able to realise his freehold properties at reasonable marketable prices, he could discharge his liabilities in full. The Official Receiver, in his observations, stated that between September, 1901, and April, 1903, the debtor was carrying on business as a builder in Leek-road, Hanley, in partnership with another, under the style of Ball and Shenton, and that he subsequently traded by himself in the same town. The debtor stated that his turnover during the last six years had averaged £7,000 per annum, and that within the same period he had regularly employed about thirty-five workmen, whose weekly wages averaged £40. Having regard to the present state of the market, it was impossible to confirm the debtor's estimate of the value of the mortgaged properties. The debtor having made a proposal to discharge his unsecured debts by the payment of 10s. in the pound, the meeting was adjourned for three weeks in order that the offer might be considered.

CHIPS.

The urban district council of Ilford are about to build a central library in Oakfield-road at an estimated cost of £6,000.

The City of Philadelphia has decided upon public improvements to be undertaken during the coming season at a cost of six million dollars.

Nos. 288, 290, and 292, Regent-street, and No. 16, Great Castle-street, W., are about to be reconstructed from plans by Mr. Colvin T. Armstrong, A.R.I.B.A., of Charing Cross, S.W.

We are pleased to hear that M. Joseph Rippl-Rónai, a Hungarian painter of world-wide reputation, who since the beginning of the war had been interned in France, has now been released and allowed to go to Switzerland.

A new synagogue in Eskdale-terrace, Jesmond, Newcastle-on-Tyne, was opened on Wednesday by Sir Stuart Samuel, Bart, M.P. It has been built from designs by Mr. M. K. Glass, and the contractors were Messrs. Elliott Brothers, of Newcastle.

Colonel E. M. Bruce Vaughan, F.R.I.B.A., of Cardiff, has prepared plans for the new medical-school buildings about to be erected in that city. The physiological block will be put in hand forthwith, the builders being Messrs. Turner and Co. Sir Wm. James Thomas has given £90,000 for the project.

We regret to hear that Mr. R. W. Wilson, Royal Army Medical Corps, Territorials, died on Feb. 28 of cerebro-spinal meningitis. Mr. Wilson, who was nineteen years of age, was an exceptionally promising student in the first-year day-school of the Architectural Association, and left the school to join the R.A.M.C. in December last.

The new Waveney workhouse hospital at Ballymena is approaching completion. It is E-shaped on plan, and faces Cusherdall-road; it is two stories in height, with attics in the roofs, and provides eighty-eight patients' beds. The outside walls are of cement roughcast, and the roofing of green Buttermere slates. Messrs. Patterson and Grahame, of Belfast, are the architects, and Mr. William Dowling, of Belfast, is the builder. The cost will be about £7,000.

Mr. William Blair, gas manager of Helensburgh, while out cycling on Saturday, was pitched from his machine on the Lower Row-road, and died soon afterwards in the local Victoria Infirmary. Mr. Blair succeeded his father as gas manager of East Wemyss. He afterwards became gas manager at Haddington, and about fifteen years ago took charge of the Helensburgh Corporation gasworks on their being transferred from a private company. Mr. Blair was recognised as an authority on gas engineering, and five years ago held the position of president of the Scottish Association of Gas Managers. He leaves a widow and two sons and two daughters.

Our Office Table.

At a recent meeting of the Gateshead Guardians reference was made to the fact that forty years have elapsed since Mr. W. Lister Newcombe, of Newcastle, was first engaged, as an architect, by that authority. Members expressed appreciation of his services and a hope that these might be continued. Mr. Newcombe's first work for the Board, in 1875, comprised additions and alterations to the old workhouse in Union-lane, Gateshead, now Coatsworth-road and Bensham-avenue. Subsequently Mr. Newcombe supervised the building of an entirely new workhouse at Bensham, with considerable extensions and additions, as further accommodation became necessary; also the building of the Shotley Bridge Cottage Homes for the accommodation of children, with administrative buildings, workshops, etc.; a hospital for consumptives at Shotley Bridge, and extensive buildings for the accommodation of the aged and infirm. We congratulate the guardians on their good fortune in having so long enjoyed such faithful and effective co-operation and echo their hopes that it may be long continued.

Mr. Lawson Purdy, president of the Tax Department of the New York City, has come out plainly against skyscrapers, and following his lead the Advisory Council of New York says that experience has demonstrated that tall buildings have a depressing effect on taxable and income values of adjoining property. Mr. Purdy believes that "a new principle affecting American real estate is slowly being evolved—namely, a provision for light and air as a benefit to adjoining property." These expressions were called forth by the proposed ordinance whereby the building height and structural treatment of skyscrapers in New York City are to be severely restricted. On the other hand, the building code committee of the Advisory Council of Real Estate Interests of New York City, composed of Messrs. Henry W. Hodge, Otto M. Eidlitz, and Julius Francke, after an exhaustive analysis of the ordinance before the Board of Estimates, contend, as might be expected, that tall buildings are not necessarily unsafe, unhealthful, uncomfortable, or inconvenient. A comprehensive report has been submitted setting forth the objections of the council to the ordinance. It is evident that the ordinance will not be passed without a severe contest with the upholders of vested interests.

The Board of Agriculture and Fisheries desire to draw the attention of owners of woodlands and others to the fact that some collieries are still finding a difficulty in securing adequate supplies of pit-wood. In consequence of the situation created by the European War, supplies from abroad are considerably curtailed, and it is necessary to have greater recourse than usual to home-grown timber. Landowners may, the Board suggest, find this a favourable opportunity to sell, at a remunerative rate, timber of which they have hitherto found it difficult to dispose to advantage: as a rule, however, collieries are not prepared to buy standing timber unless the woods are in their immediate neighbourhood. Information as to the kinds of timber required, marketing, and other matters in this connection, will be found in Special Leaflet No. 17, copies of which may be obtained post free on application to the Secretary, Board of Agriculture and Fisheries, Whitehall-place, W.C.

Sir Courtenay Warner, M.P., presiding at the meeting of the Law Land Company, held on Wednesday, said that when they considered that for the latter period of the year under review the country had been engaged in a war of unprecedented magnitude, it was really wonderful that they had managed not only to maintain, but to increase, their revenue. Had it not been for an unusual expenditure on repairs and improvements, of which they hoped to reap the benefit in the future, the net result would have been, on paper at least, even more satisfactory, but as they were able to maintain their usual

dividend up to the level of 7 per cent., and in addition to add nearly £4,000 to the leaseholds redemption account and £10,000 to the reserve account, he did not think they had much to complain of. They had this year taken £4,000 from the reserve for improvements. Up to now office property in the City had been a great deal more affected by the war than property in their neighbourhood, but he was afraid they could not expect to escape their share of the general misfortune, and must be prepared for some losses in rent. The report was adopted.

Trade News.

WAGES MOVEMENTS.

THE LABOUR MARKET IN FEBRUARY — The Director of the Department of Labour Statistics of the Board of Trade, in his monthly article on the state of the labour market, says the employment in February showed a further improvement. There was an upward movement in the iron and steel, building, furnishing, and woodworking, and pottery trades. During the month there was a marked upward movement in wages. Compared with the good conditions of March, 1914, all trades engaged on Government work showed a noticeable improvement. There was, on the other hand, a marked decline in the tinplate, pottery, and brick trades. The month was marked by a strong upward movement in wages. In the trades compulsorily insured against unemployment—viz., building, works of construction, engineering, etc.—the percentage of unemployed throughout the United Kingdom at March 5 was 1.90, as compared with 2.48 a month ago, and 4.18 a year ago.

We regret to hear that Mr. Henry S. Tuke, R.A., the well-known marine painter, is lying seriously ill at his house, Lyndon Lodge, Hanwell.

At Cleethorpes, Mr. E. Dudley held a Local Government Board inquiry on Tuesday into an application from the urban district council for sanction to borrow £6,250 for road-widenings and improvements.

Works of water-supply are being carried out at Topsham, South Devon, from plans by and under the supervision of Mr. R. Lowcock, M.I.C.E., of Queen Anne's Gate, S.W. The contractor is Mr. J. R. Harris, of Exeter.

A Local Government Board inquiry was held on Friday at the Municipal Offices, Southampton, by Mr. W. O. E. Meade-King, M.Inst.C.E., into the application of the town council for sanction to borrow £1,700 for the widening and improving of Welbeck-avenue.

The Secretary of State for India has approved of the grant of a bonus of £1,000 to Miss Bell, the only child of the late Mr. J. R. Bell, C.E., of the Railway Department of India. Mr. Bell, who died in July, 1913, devised a method of training and controlling the great rivers of India at the sites of railway bridges, thus effecting an immense economy in maintenance.

At Easter a new cookery school is to be opened at Staple Hill, Bristol, as an adjunct to the council school. It is 48ft. by 27ft.; the floor is tiled, and there is a glazed dado to the walls. Mr. R. Phillips, of Gloucester, has designed the new school; Mr. Wilmott, of Kingswood, is the builder; and Mr. Harris Edwards is the clerk of works.

The foundation-stone of a new church was laid on Monday at the corner of City and Portland roads, Edgbaston. From a series of competitive plans those of Mr. Edwin F. Reynolds were selected, and provision is made for a brick building, with stone facings to accommodate about 650 worshippers. The contract for erecting the new church has been given, at £8,400, to Messrs. Collins and Godfrey, of Tewkesbury.

Glasgow Corporation decided some time ago to extend their electricity-producing facilities by the erection of large works at Dalmarnock, which will form the chief source of supply for both lighting and power purposes. The excavation operations for the new buildings are in course of completion, and the site was visited on Saturday afternoon by the members of the electricity committee. The first part of the works will be ready to deliver energy at the beginning of the winter of 1916-17. The site covers over 13 acres, and was purchased for £27,112. The ultimate capacity of the works will be 140,000 kilowatts, or 200,000 H.P.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Victoria and Albert Museum. "German Mediæval Architecture," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.

Royal Society of Arts. "House Building: Past and Present," Cantor Lecture No. 2, by M. H. Bailie Scott. 8 p.m.

WEDNESDAY.—Royal Society of Arts. "The Industrial Uses of Coal Gas," by H. M. Thornton. 8 p.m.

THURSDAY.—British Museum. "St. Mark's, Venice," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.

SATURDAY (MARCH 27).—Institution of Municipal and County Engineers, South Wales District Meeting at the City Hall, Cardiff. "Notes on Extraordinary Traffic on Highways," by D. M. Jenkins, Neath. 2.15 p.m.

TRADE NOTES.

Boyle's latest patent "Air-pump" ventilator has been applied to the General Booth Memorial Hall, King Edward-street, Nottingham.

The architects for the Somerset Education Committee have been building new schools for the Langport Council. The large cement-concrete playground has been waterproofed with Puddo. The work is now completed, and the architects report that they are very pleased with it.

At the request of Messrs. P. Hill and G. Hodge, the partnership lately existing between themselves and W. Manders (trading as W. Manders and Co., of Leyton) has been dissolved, and, in co-operation with several gentlemen well known in the contracting world, Messrs. Hill and Hodge are commencing business as public works contractors, under the style of the Municipal Contracting and Engineering Co. Since the early part of 1912 they have tendered for and carried out the whole of the contracts obtained by Manders and Co., Mr. Manders having been absent in Canada.

The late Mr. Frederick Kirk, Fitzwilliam-street, Huddersfield, architect and surveyor, left estate valued at £5,165.

The Local Government Board have sanctioned the borrowing of £42,537 by the corporation of Barrow-in-Furness for gasworks purposes.

Mr. F. Simmonds, jun., of Littlestone, has been appointed surveyor and inspector to the New Romney Town Council.

A new church is about to be erected at Cloughwater, Ballymena, from plans by Mr. S. J. McFadden, architect, Coleraine.

At a meeting on Friday of members of the Royal Society of Painters in Water-Colours, Mr. Harry Watson was elected an Associate.

Mr. George S. Barry, of the city surveyor's office, Dundee, has been appointed road surveyor for the Deer district of the Aberdeenshire County Council, in succession to Mr. George Calvert.

Mr. Basil Mott, M.Inst.C.E., of Westminster, has been appointed by the Newport, Mon., Corporation as expert to advise the corporation with regard to the rebuilding of Newport Bridge.

The Empire Theatre at Cardiff is about to be reconstructed at a cost of £50,000. The architects are Messrs. William and T. R. Milburn, of Sunderland, and the builders are Messrs. E. Turner and Sons, Ltd., of Cardiff.

A start will be made shortly in connection with the Sutton Trustees' working-class model dwellings in Newcastle-on-Tyne. The site, containing about 2½ acres, is bounded by Barrack-road, New Mills, Moor-street, Back Jefferson-street, and Derby-street. Mr. Charles S. Errington, of Grainger-street West, Newcastle, is the architect.

Permission has been granted to Messrs. John Brown and Co., Ltd., shipbuilders, Clydebank, to erect twenty cottages on ground situated east and west of Cochno-street, Whitecrock. The cottages, which are to house the firm's foremen, are each to consist of three rooms and kitchen, with bathroom and scullery, and are to cost £7,000.

At the last meeting of the Dublin Corporation authority was given to make application for sanction to a loan of £56,000 for the purpose of building workmen's dwellings on the McCaffrey estate. It is proposed to let the houses, when complete, at 7s. a week. It was stated that 21,000 houses are wanted for the working classes of Dublin. When the corporation schemes have been carried out a total of 10,000 dwellings will be provided.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

	Per standard.	
Yellow Pine Deals, 1st quality...	£53 0 0 to £57 0 0	
2nd	43 0 0 " 45 0 0	
White Deals: First	22 0 0 " 24 0 0	
Seconds	20 0 0 " 22 0 0	
U.S. Yellow Planks, Deals, and Battens	10 10 0 " 14 10 0	
	Per cubic foot.	
Oak: Austrian Wainscot	£0 10 6 to £0 12 6	
Teak: Burmese, per load, 50ft.	25 0 0 " 34 0 0	
Teak: Java, per load, 50ft.	24 0 0 " 27 0 0	

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£8 10 0 to £8 13 6	
Wrought-Iron Girder Plates	8 15 0 " 10 0 0	
Steel Girder Plates	8 17 6 " 9 17 6	
Bar Iron, good Stacks	6 5 0 " 8 10 0	
Do., Lowmoor, Flat, Round, or Square	22 0 0 " 0 0 0	
Do., Welsh	5 15 0 " 5 17 0	
Boiler Plates, Iron—		
South Staffs	8 0 0 " 8 15 0	
Best Seadhill	9 0 0 " 9 10 0	
Angles 10s., Tees 20s. per ton extra.		
Builders' Hoop Iron, for bonding, &c., £8 15s. to £9.		
Ditto galvanised, £14 to £15 10s. per ton.		
Galvanised Corrugated Sheet Iron—		
No. 18 to 20. No. 22 to 24		
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0 " £13 10 0	
Best ditto	13 10 0 " 14 0 0	
	Per ton.	Per ton.
Cast-Iron Columns	£6 17 6 to £8 10 0	
Cast-Iron Stanchions	6 17 6 " 8 10 0	
Rolled-Iron Fencing Wire	8 5 0 " 8 10 0	
Rolled-Steel Fencing Wire	7 5 0 " 7 10 0	
Cast-Iron Sash Weights	5 15 0 " 6 0 0	
Cut Floor Brads	10 15 0 " —	
Corrugated Iron, 24 gauge	16 0 0 " —	
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14 5 0 " —	
B.B. Drawn Telegraph Wire, Galvanised—		
0 to 8	10 11 12	B.W.G.
£10 10s. £10 15s. £11 0s. £11 5s. £11 10s. per ton.		
Cast-Iron Socket Pipes—		
3in. diameter	£6 15 0 to £7 2 6	
4in. to 6in.	6 10 0 " 6 12 6	
7in. to 24in. (all sizes)	6 17 6 " 7 2 6	
[Coated with composition, 5s. 0d. per ton extra.		
turned and bored joints 5s. per ton extra.]		
Pig Iron—		
Cold Blast, Lillieshall	80s. 0d. to 127s. 6d.	
Hot Blast, ditto	87s. 0d. " 97s. 0d.	
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—		
Gas Tubes	72½ p.c.	
Water Tubes	66½ " "	
Steam Tubes	65 " "	
Galvanised Gas Tubes	60 " "	
Galvanised Water Tubes	56½ " "	
Galvanised Steam Tubes	50 " "	

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	£28 0 0 to —	
" " Country	29 0 0 " —	
Lead Barrel Pipe, Town	29 0 0 " —	
" " Country	30 0 0 " —	
Lead Pipe, Tinned inside, Town	30 0 0 " —	
" " Country	31 0 0 " —	
Lead Pipe, Tinned inside and outside	32 10 0 " —	
" " Town	33 10 0 " —	
" " Country	33 10 0 " —	
Composition Gas Pipe, Town	33 10 0 " —	
" " Country	33 10 0 " —	
Lead Soil-pipe (up to 4in.) Town	33 10 0 " —	
" " Country	33 10 0 " —	
[Over 4in. £1 per ton extra.]		
Lead, Common Brands	17 17 6 " £18 12 6	
Lead Shot, in 28lb. bags	24 15 0 " —	
Copper Sheets, sheathing & rods	86 0 0 " 86 10 0	
Copper, British Cake and Ingot	71 10 0 " 72 10 0	
Tin, English Ingots	186 0 0 " 190 0 0	
Do., Bars	187 0 0 " 191 0 0	
Pig Lead, in 1cwt. Pigs (Town)	19 2 6 " 20 2 6	
Sheet Lead, Town	27 10 0 " —	
" " Country	28 10 0 " —	
Genuine White Lead	34 0 0 " —	
Refined Red Lead	30 0 0 " —	
Sheet Zinc	69 0 0 " —	
Old Lead, against account	22 0 0 " —	
Tin	10 10 0 " —	
Cut nails (per cwt. basis, ordinary brand)	0 13 3 " —	
* For 5 cwt. lots and upwards.		

SLATES.

	in.	in.	£ s. d.	per 1,000 of
Blue Portmadoc	20	10	12	6 1,200 at r. stn.
" "	18	8	6	12 6
Blue Bangor	20	10	13	2 6
" "	20	12	13	7 6
First quality	20	10	13	0
" "	20	12	13	15 0
" "	16	8	7	5 0
Eureka unfading	20	10	15	7 6
green	20	12	15	7 6
" "	18	10	13	5 0
" "	16	8	10	5 0
Permanent Green	20	10	11	12 6
" "	18	10	9	12 6
" "	16	8	6	12 6

BRICKS.

(All prices net.)

First Hard Stocks	£1 15 0	per 1,000	alongside, in
Second Hard Stocks	1 11 0	"	" (river.
Mild Stocks	1 9 0	"	"
Picked Stocks for			delivered
Facings	2 5 0	"	at rly. stn.
Flettings	1 14 0	"	"
Pressed Wire Cuts	1 18 0	"	"
Red Wire Cuts	1 14 0	"	"
Best Fareham Red	3 12 0	"	"
Best Red Pressed			"
Ruabon Facing	5 0 0	"	"
Best Blue Pressed			"
Staffordshire	3 15 0	"	"
Ditto Bullnose	4 0 0	"	"
Best Stourbridge			"
Firebricks	4 0 0	"	"
2½in. Best Red Ac-			Net, delivered in
crington Plastic	4 10 6	"	full truck loads
Facing Bricks			in London.
3½in. Accrington Best Red Plastic Facing per 1,000			
Bricks	£2 10 0		
3½in. ditto Second Best Plastic ditto	2 2 6		
Ditto Ordinary Secondary Bricks	1 11 3		
Ditto Plastic Engineering Bricks	1 17 6		
Sewer Arch Brick not more than 3½in			
thickest part	2 0 0		
3½in. Chimney Bricks fit for outside work	2 6 0		
3½in. ditto ditto through and through	2 0 0		
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3 course deep, 4½" soffit, per foot opening...	0 1 3		
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5 ditto 4½" ditto ditto ditto	0 2 1		
6 ditto 4½" ditto ditto ditto	0 2 6		
3 ditto 9" ditto ditto ditto	0 2 1		
4 ditto 9" ditto ditto ditto	0 2 11		
5 ditto 9" ditto ditto ditto	0 3 6		
6 ditto 9" ditto ditto ditto	0 4 6		
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Double Stretchers—				
17 17 6 16 7 6 20 17 6 24 7 6 17 17 6				
Double Headers—				
14 17 6 13 7 6 17 17 6 21 7 6 14 17 6				
One side and two ends, square—				
18 17 6 17 17 6 21 7 6 26 7 6 18 17 6				
Two sides and one end, square—				
19 17 6 18 7 6 22 17 6 26 17 6 19 17 6				
Splays and Squints—				
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* All F.O.R. London.		

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Ditto, Mauritius	42 10 0 " 43 0 0
Palm, Lagoa	32 5 0 " 33 5 0
Ditto, Nut Kernel	35 0 0 " 35 10 0
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Sperm	30 0 0 " 31 0 0
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Superfine Pale Elastic Carriage	0 16 0		
Fine Pale Maple	0 10 0		
Finest Pale Durable Copal	0 18 0		
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Carnegie Library, Chorlton-cum-Hardy, Manchester. View, plan, and section. Mr. Henry Price, City Architect, Manchester.

No. 70, New Bond-street, W. View and plan. Messrs. Palgrave and Co., Architects.

Measured Drawings of "The Study," Culross, Perthshire. 17th-Century Inlaid Frieze and Oak Panelling. Drawn by Mr. J. Scott Lawson.

SCOTTISH DOMESTIC ARCHITECTURE.

"THE STUDY," CULROSS, PERTHSHIRE.

[WITH ILLUSTRATIONS.]

Among the numerous smaller towns situated on both sides of the Forth, not a few specimens of Scottish domestic architecture are to be found quite equal to those in better-known cathedral cities and other more historic places. Indeed, as Messrs. MacGibbon and Ross point out in their "Castellated and Domestic Architecture of Scotland" (1892), nowhere does Scotch town and village building appear to more advantage than along the margins of the Forth, where considerable prosperity was enjoyed during the 16th and 17th centuries. Previously, and well back in the earlier period alluded to, a considerable trade was carried on between the ports of the Forth and the Continent, especially with the Low Countries; and these towns were consequently amongst the richest communities of the country. Culross, in Perthshire, is a very ancient instance of this class, though now so deserted, standing unkept along a narrow strip of ground on the north side of the Firth of Forth beneath a steep bank, the summit of which is crowned by the ruins of the dismantled abbey.

In the reign of James VI., Culross was created a royal burgh (1588) when it had acquired considerable prosperity in connection with its coal-workings and the manufacture of salt. The fame of the smiths or "hammermen" of Culross was due to their expertly-made "girdles" for baking oatcakes, for which King James VI. confirmed their possession of a monopoly in 1599. The ruins of the old kirk and abbey, together with some old structures still retained in the town, recall its historic importance. The large mansion of the Bruces of Kinloss, erected early in the 17th century, and subsequently altered by Sir William Bruce, presents an imposing appearance, and is known as "Culross Abbey House." This Culross estate, at the end of the 18th century, passed into the hands of Sir Robert Preston, who destroyed a great part of the old abbey. Towards the end of his life, however, he set to work to repair some of the damage he had done, as mentioned by Sir Walter Scott, who made a note of what was being done when he visited Culross in 1830.

It has been thought that Inigo Jones designed this house; but there is no evidence of that, and John Mercer, the architect of a monument in the abbey church, may, perhaps, have designed it, as the details "betray the hand of one little accustomed to pure Renaissance design." The Palace of Culross, more accurately

termed the "Colonel's Close," was the place of the "Black Colonel," John Erskine of Carnock. This term "palace" seems to have originated with the mistake of Captain Kerr in "identifying with a royal residence the 'palatium' or 'palace' in the title deeds of the Colonel's Close—the word 'palatium' being the appellation which in law Latin phraseology is used to denote any large or imposing building, more especially any building which is occupied by a nobleman." ("Between the Ochils and the Forth," by D. Beveridge.) A description of the "Palace" is given in Vol. II. of Messrs. MacGibbon and Ross' standard work already quoted from. It has a large courtyard, and is rapidly going to decay, whereas a few pounds judiciously applied might now save a valuable monument, which otherwise stands unaltered, and includes much work of good decorative character, though externally it is simple and unsophisticated in appearance.

The "town house" of Culross is a good example of the class of edifices of its period—the 17th century. Ascending the hill, in a small open space stands the "town cross," and near by a tower belonging to the old structure, known as "The Study." This tower is eminently characteristic of Scottish design, with its saddle-back roof, gabled with stepped copings back and front, accompanied by the usual corbelled-out upper stair-turret, the roof of which merges, in this case, into that of the tower itself, next a lean-to topped dormer, which is repeated next the front chimney on the other side of the tower. Below there is a large wheel stairway, going up to the second floor, and giving access to the two large rooms in the adjoining tenement, one of which is still panelled, as shown by the accompanying sheet of measured drawings, so carefully delineated with much spirit by Mr. J. Scott Lawson, to whom we are indebted for their loan. The building is supposed to have been occupied by the Abbots of Culross, and this tower is undoubtedly of pre-Reformation date. The adjoining tenement bears on the lintel of the door (now partly built-up) a Greek inscription signifying "God provides and will provide." The building has all the character of the 17th century. Other examples of a like kind survive in this "most striking instance of a *villa moute* in Scotland."

The particular apartment of which we give Mr. Scott Lawson's details is on the first floor of "The Study," and the room measures 21ft. by 16ft., planned, as shown by his key sketch of its quaint arrangement, next the older stair-tower. The chief interest about the building consists in these beautiful remains of oak panelling, which is of exceptional charm. Originally,

all four of the walls were covered with similar wainscoting, when the room must have had a handsome appearance; but, unfortunately, a very considerable portion of this fine joinery-work has long gone away or perished. The building at the present time remains tenantless, being left to the mercy of the elements, quite uncared for, and neglected. Only about three bays of the woodwork are extant *in situ*, though, fortunately, a part of the return on the window-jamb is intact, illustrating the particular and clever treatment of the angles. What is left is in a perfect state of preservation so far as it exists at all. At various times the oak has received a casual coat or two of paint, most of which colouring has, however, now peeled off, displaying the choice silvery grain of the wainscot. The frieze is cleverly inlaid with strips of dark and of yellow wood alternating, and the inlaid richer panels of the frieze are typical of its date. The background is all of oak. The carved-oak trusses are very quaintly designed, and the mouldings are very graceful and pretty, the whole thing being of good scale and picturesque in conception, therefore eminently suggestive.

The work bears the date of 1633, inlaid in pale yellow, and the monogram, figuring at large on our illustration, may be intended either for "A. P." or "A. R.," the work being somewhat uncertain in the second letter. Considering the scarcity of ancient woodwork in Scotland (though J. W. Small's excellent book on "Scottish Woodwork" illustrates many contemporary and equally interesting examples), it is a great pity this beautiful remnant at Culross should remain in so deplorable a state of neglect. It deserves far better care than it is now getting. By thus directing attention to the matter, possibly we may prompt some attempt to redeem it from its present sorry condition. An endeavour, we think, might be made to insure the conservation of so valuable a piece of historic craftsmanship, at present risking ruin, by the Society for the Protection of Ancient Monuments, or the Royal Institute of British Architects, or by the Allied Societies of Scotland. It is true what remains is comparatively small; but it is surely worth saving.

THE ROYAL SOCIETY OF BRITISH ARTISTS.

The 143rd Exhibition of the Royal Society of British Artists is one of the best spring shows we remember. There is no very striking picture; but the general level, of more than average merit, is a very respectable one, and there are very few eccentricities on the walls. The

pictures are well hung, and the visitor will be well rewarded by a couple of hours' quiet enjoyment; and if, unlike most of us, he has any money to spare just now, he will pick up some bargains at present prices which will sensibly appreciate in the near future.

The most noticeable work in that corner of the Central Gallery is Mr. Christopher Williams's portrait of Mr. Lloyd George (9). There are those who know him out of politics who laud the Chancellor of the Exchequer's geniality, and even the victims of his Budgets will admit that the artist has invested his subject with a smile possible only on the countenance of a universal benefactor. It may, of course, be merely the well-deserved expression of satisfaction with the result of the sittings. Mr. Christopher Williams has also a well-rendered reminiscence of "Moonlight, Bournemouth," in the South-west Gallery (112). Both Mr. Hal Hurst's exhibits are good. "The Absent One" (11) will evoke many sympathies, and "Yvonne" (80) will win well-deserved admiration. Mr. Charles Clifford's "Sussex Pastoral" (12) and "The Wood Gatherer" (118) are both good, and so is Mr. Westley Manning's "The Deer Park, Sussex" (15). Mr. E. G. Eves's "Mrs. Jourdain" (21) is one of the best of the portraits, and his two Cornish sketches (178 and 182) are well rendered. Another good portrait is that of Lieut. E. H. MacGregor Whetton (24), by Mr. J. W. Schofield, who also shows a pretty "Pastoral" (137), a "Nocturne" (185) and a small but interesting sketch, "Sand Dunes, Devon" (223). "When the Leaves are Falling" (27), by Mr. A. St. John McCall, is an appropriately conceived autumnal landscape; his "Golden Autumn, Brittany" (47) perhaps the more attractive. Mr. W. M. Palin's "Improvisante" (13) is excellent. Of his three works in the Central Gallery, Mr. J. H. Amshewitz's "Aged Worldling" (31) tells its story most significantly.

The portrait of the Rev. C. Fleming Williams (30), by Mr. F. Gregory Brown, is a very good one. Mr. Heley Smith's "Mons. Alphonse Allaerts," is full of character, and his three sea-pieces—"The Coming of the Storm" (34), "A Narrow Escape" (38), and "Running Up Channel" (138)—will please all his admirers. The "Coming of the Storm" (34), by Mr. A. H. Elphinstone, is an impressive rendering of coming meteorological trouble. "The Thames at Greenwich" (36), by Mr. John Muirhead, the original of the principal illustration in Hilaire Belloc's "River of London" is good, and so are his "Outside the Ramparts, Bruges" (132) and "Bruges from the Ostende Canal" (190).

Mr. W. E. Riley, F.R.I.B.A., contributes two of his welcome marine subjects, "A Lonely Shore" (153), and the more spirited "A Breeze at Anvil Point" (175).

Among others that should not be missed are "The Portal" (41), by Mr. H. Davis Richter; "Abandoned" (44), by Mr. D. Murray Smith; "The Rainbow" (45), by Mr. Philip T. Gilchrist; "Autumn Gold" (57), by Mr. Charles Collins; a "Portrait of the Bishop of Travancore" (60), by Mr. T. F. M. Sheard; "The Weald of Kent" (65), by Mr. Henry S. Kottig; and "In Spain: Holy Week" (77), by Mr. Trevor Haddon. Mr. A. Wallace Rimington has two nice water colours, "The Rhone Valley, from Les Pleiades" (123), and "Rimini" (141).

Of an architectural character the best are the "Porch of St. Mary the Virgin, Oxford" (152), and "Ely Cathedral" (184), "St. Paul's Cathedral: The Ambulatory" (188), and "Pay Day, Royal Hospital, Chelsea" (211), all by Mr. John Eyre.

There is not much sculpture. Mr. Courtenay Poole shows a good "Marble Head: Pauline" (83A); "Daisy," a Daughter of Mr. Leicester Harmsworth, M.P. (83B), and a large plaster, "Lorelei" (190A).

THE USE OF ELECTRICITY IN THE MANUFACTURE OF PORTLAND CEMENT.*

By MALCOLM McLAREN.†

There are few industries in which the cost of power represents such a large percentage of the total cost of production as in the manufacture of Portland cement. Any means, therefore, which may be employed for reducing the amount or cost of this power must receive most careful consideration. A great deal of attention is being given to the development of more efficient methods of grinding, and while these efforts should be encouraged, the writer's experience indicates that the amount of power required to produce the same quality of cement varies little with the different types of grinding machines in common use, when given equally intelligent supervision. It is also believed that in no way can the cost of production be more materially reduced than by the extensive use of electric drive.

In the process of manufacture the cement rock is brought from the quarry to crushers, which break it into pieces three or four inches in diameter. Then it passes into drivers where all moisture is removed, then to the pulverising machines, and then to the rotary kilns. The pulverised stone is fused in the kilns, and comes out in the form of hard clinker balls averaging about an inch in diameter. This clinker is then ground to the desired fineness of finished cement and delivered to the store-house. Fuel is furnished to the kilns in the form of pulverised coal, and this must be prepared at the mill. Elevators and conveyors are used for transmitting the material through the works. A relatively small amount of power is required in the stock-house for operating packing machines and in the machine-shop, and in some cases also for air compressors, hoists, and pumps.

In most of the earlier cement mills, which were of comparatively small capacity, all the machinery was driven by steam engines. The power-house was placed between the raw stone grinding and finishing departments, a separate engine being employed to drive each side. Various methods were used for driving kilns, coal pulverising machines, and other parts of the mill, which often involved complicated transmissions or long steam-pipes. The obvious adaptability of electric power for the operation of these outlying portions of the mill first led to the introduction of motors for cement manufacture.

As mills increased in size it became more difficult to operate one department from a single engine without considerable complication in the drive and attendant loss of power. Also the single-unit drive involves considerable loss in production due to the necessity of shutting down the entire department when any change is required in the machinery. Attempts have been made to minimise such delays by using clutches for the control of the individual machines, but these have not proved sufficiently successful to come into general use. In many cases, therefore, motors are now being used for driving the main grinding machines. Sometimes these are employed simply in extensions or for driving the machines more distant from the power-house. In other cases the entire mill is operated electrically. Thus there has been a gradual enlargement in the field of electric operation, until now it is a comparatively easy matter to demonstrate the advantage of such a drive for an entirely new mill. For an existing plant, however, it is more difficult to determine whether to abandon per-

fectly serviceable steam-engines and mechanical transmission in order to obtain the advantage of electric operation. There is also the still broader question, applying to both existing and contemplated installations, as to whether the cement company should produce its own power or purchase this from a public supply company. It is the object of this Paper to discuss briefly some of the elements which enter into the solution of these problems.

Considering first the case of an existing steam-driven plant, for which it is proposed to substitute new steam units, generators, electric transmission, and motors. It might appear at first sight as though such a change could not be justified, as steam is still to be used to generate power, which is now applied in a more direct manner. The saving under the new arrangement, of course, is largely due to the improvement in steam economy in the high-speed turbine sets used with electric-drive over that of the engines they replace. The problem reduces itself to the question of whether the contemplated change will reduce the cost of production sufficiently to cover the overhead charges on the new apparatus and show a fair margin of profit on the capital invested.

COST OF INSTALLATION.

In order to figure the cost of the new installation it is first necessary to decide upon the method of drive, especially whether to employ one motor for each grinding-machine or for a group of machines. The arrangement and type of apparatus will largely determine this matter. If a vertical driving-shaft is used on the grinding-machine an individual motor may be advantageously employed, for this avoids a twisted belt, with a consequent saving in maintenance both for the belt and the bearings. Individual drive gives the maximum flexibility in operation, but increases both the first cost and the maintenance of the electrical apparatus, so that some grouping of the machinery is generally advisable. The question of whether to use direct or alternating current reduces itself almost entirely to a matter of first cost, which is in favour of the alternating-current system. Either type of motor will satisfactorily do the work, and there should be little difference in the cost of maintenance. The proper capacity to use for motors can usually be determined from the company's records or from the machine-makers. The generator capacity can be best determined from a test on the existing plant. With these data at hand, the cost of the new installation may be readily estimated.

Taking up next the comparison of operating costs, it will be found that cement companies usually keep accurate records of all items entering into their power costs. These give no indication, however, of the amount of power developed, and this must be known in order to estimate the cost of power under the new conditions. As the load is not subject to wide fluctuations, it is possible to make a close determination of the average power consumption from a carefully arranged twenty-four-hour test, during which the total quantity of steam changeable to power, development should be measured and indicator-cards taken at frequent intervals on all the principal engines. If there are any small engines a few cards should be taken upon these or their load estimated from the character of their work. At the same time the output of cement should be carefully noted. It is important that during the test the mill should operate under normal conditions, both as regards the machinery in service and the character of the material being ground. Then the measurements upon the steam and cement output give the quantity of steam required per barrel under existing conditions, and the power records and output give the corresponding power consumption per barrel. The power required under the new conditions will be the same as before except as modified by the difference in efficiency of transmission, which is usually slight, and may be neglected except in extreme cases, or when great accuracy is desired. Knowing the power per barrel, the quantity of steam per barrel under the ne-

* Presented before Section D of the American Association for the Advancement of Science at the Philadelphia Meeting.

† Professor of Electrical Engineering, Princeton University, Princeton, N.J.

conditions may be obtained from the turbine-makers' steam guarantees. Having then the quantity of steam under the new condition, and the quantity of steam and itemised cost of power under the old conditions, it is a simple engineering problem to determine the cost of power under the proposed arrangement, and show the saving which may result from the change. When making this comparison consideration must be given to the fact that the increased flexibility of motor-drive will reduce delays in the mill, and thereby increase production. It also may allow some rearrangement of the mill machinery, with a consequent reduction in operating cost. While the above method of investigation may appear somewhat complicated, it is believed that all these matters must be duly considered in order to reach any proper conclusions.

Turning next to the question of whether such a cement company should equip with motors and purchase power from an electric supply company, the same general procedure may be followed, though the investigation is simplified now, as no steam measurements need be made, and the cost of power may be derived directly from the supply company's rates when the amount of power per barrel has been determined from test. In this case the losses in the generation of power, which may amount to 10 per cent. of the total load, will be saved to the cement company. On the other hand, transformer losses amounting to about 3 per cent. must be added, unless power is delivered at a voltage suitable for mill operation. Also, under the new conditions, the mill output should be increased, owing to more uniform drive, for with the close regulation of a large supply system, the speed of the mill machinery may be maintained near a desired maximum, while in most cement mills which generate power, the speed drops frequently on account of low steam pressure, low vacuum or overload on the engines. Many companies which have changed over to purchased power testify to a marked increase in output due to this cause. They also find that when their superintendents are relieved from maintaining their power equipment they are able to concentrate their attention upon production with beneficial results.

Granting, then, that the cement company may derive certain advantages by purchasing power, the question naturally arises, whether the supply company will obtain any corresponding benefit from the transaction. This will depend upon the character of the load, the cost of production and the amount of energy to be supplied. The ideal load for any supply company is one which is constant throughout the year, or, in other words, which has a load factor of 100 per cent., but most companies consider themselves fortunate if they can reach a load factor of 40 per cent. The cement load, on the other hand, approaches this ideal as closely as in any industry, for it varies little, day or night, summer or winter, often maintaining a load factor above 80 per cent. for months at a time.

The cost per unit at which power may be developed in any locality varies considerably with the total output of the plant producing it, for the capital cost per kw. for buildings, turbines, generators, and practically all parts of the system decreases as the size increases. Also, the operating cost diminishes on account of improved steam economy and general efficiency of the apparatus, lower cost for attendance, supervision, and maintenance, and the opportunity of locating the plant more favourably with respect to cheap coal and water supply. There may also be the opportunity of obtaining power from a hydro-electric system which may result in a still further reduction in cost. The question, then, of whether the supply company can produce power more cheaply than the cement company is largely a matter of the relative size of the two installations. This leads to the consideration of the volume of the cement load. While this, of course, varies in different localities, some indication of its magnitude may be obtained by considering the eastern Penn-

sylvania district, which supplies this market. Here, in a narrow strip of territory less than 20 miles long, the total output exceeds 60,000 barrels of cement per day, and while the load on the individual mills varies from about 1,000kw. to 5,000kw., if the power were supplied from one central station the load would reach approximately 50,000kw., with a daily output exceeding 1,000,000 kilowatt-hours.

It is not surprising, therefore, that the cement companies throughout the country are changing over to the electric-drive at a rate that should soon cause the steam-driven plant to be looked upon almost as a curiosity.

INTER-STATE CONFERENCE OF AUSTRALIAN ARCHITECTS.

At a special meeting of the Victorian Institute of Architects, held in their room, 57, Swanton-street, Melbourne, on Tuesday, the 15th December last, the President (Mr. H. W. Tompkins) reported that, at the request of the Institute, along with Mr. Bates, he had attended an Inter-State Conference of Australian Architects held at Sydney at the end of November. He said that in June last, at the invitation of the Minister for Home Affairs, the presidents of the Institutes of Architects met in Melbourne, in connection with the selection of a chairman of the Adjudication Board on the designs for the Federal Parliament House, and, as an outcome of that meeting, an inter-State conference of architects was held in Sydney during the week ending 28th November. The State Institutes were represented as follows:—New South Wales: A. W. Anderson (president), W. Newman (vice-president). Victoria: H. W. Tompkins (president), E. A. Bates (vice-president). Queensland: C. W. Chambers (president), C. McLay. South Australia: C. W. Rutt (vice-president). Western Australia: G. Sydney Jones, W. Kenwood. Tasmania: T. Tandy (president), T. P. Sampson.

A number of important matters were dealt with by the conference, the principal being the question of the formation of a federal body, which should represent the whole of the architects of Australia, and which would be in a position to deal effectively with architectural matters from a national standpoint, and take steps leading to the formation of an Australian Institute of Architects. This question was debated, and the conference unanimously resolved to recommend the formation of a Federal Council, consisting of two delegates from each State Institute, the council to be empowered to deal with matters of federal interest, such as the federal capital buildings, matters affecting two or more States, or the interests of the profession generally throughout the Commonwealth, and any question that might be referred to the Federal Council by any Institute. The first meeting of the council to be convened by the president and secretary of the New South Wales Institute, and to be held, if possible, at Canberra, if not, then in Melbourne at Easter, 1915.

Another question was a revision of the scale of charges in order to bring them into line and uniformity throughout the Commonwealth, several discrepancies being recommended for amendment. Articles of association, conditions of contract, and registration of architects were also discussed, and recommendations made, which would assist in bringing about greater uniformity in the various States, and placing the profession on a more satisfactory basis. The members of the conference attended a reception by the president and council of the New South Wales Institute. They were also entertained at an harbour excursion, and at dinner, and inspected the building trades section of the Technical College, where the methods adopted were explained by Mr. J. Nangle, Superintendent of Technical Education, and Mr. B. Hadley, Lecturer in Architecture.

If the recommendations of the conference were accepted by the State Institutes, a foundation would be laid on which might be erected an Australian Institute of Architects.

In a discussion on the conference Mr. Anketell Henderson pointed out that there

was an element of danger in the procedure that a distant State Institute should be represented by members of the Institute in the State in which the council might be sitting. The home State Institute might, perhaps, unconsciously be thereby over-represented at such council meeting. Mr. E. A. Bates said this subject had been well considered at the conference. Voting by proxy was considered necessary, and the distant State Institutes should be able to select certain members of the Institute in the State in which the Federal Council was meeting. Such delegates, however, should have definite instructions from the distant State, so that they should represent the views of those Institutes. Mr. J. H. Harvey suggested that regulations dealing with the subject of an Institute being represented by a member of another State Institute should be framed so that the position might be clearly seen.

The President urged that the Federal Council should be in a position to speak on all subjects with one voice, and solidly to represent all the Institutes of Australia. This course had been insisted upon in connection with the Federal Capital Competition. At the conference, the proposal to form an Australian Institute of Architects had been discussed. This, however, would mean the re-casting of all the six varying Articles of Association, together with a revision of the qualifications of candidates for membership. They were about to form what was to be a Federal Council, and, consequently, it would be impossible to deal with every local question which would arise. What might evolve from the council was a matter which time alone would show. As an illustration of the present position, he cited the question of registration. They in Victoria had drafted a Bill upon the lines of the Bill promoted by the Institute of Architects in New South Wales. Some of the other States, too, were dealing with this important subject. It might be urged that the promotion of a Federal Bill would bring about far better results than six State Bills. That was obvious, but for the broad fact that the Federal Parliament had no power under the Constitution to deal with the subject of registration of architects. Therefore, for the present, at any rate, the State institutes would be under the necessity of dealing with conditions as they actually existed, and not as they would like them to be.

Mr. Anketell Henderson moved, and Mr. John Little seconded, and it was carried unanimously, "That the report presented by the delegates to the Inter-State Conference of Architects be received, and the proposal to form a Federal Council detailed therein adopted."

The President explained the proposals of the Conference towards securing uniformity in the scales of charges. It had been found that although the scales in operation in Australia probably worked out with somewhat similar results, they were expressed in different forms in several of the States. The President entered into detail with the draft proposals for uniformity in the scale of charges, prepared by the Conference, and several minor alterations were suggested as the meeting progressed.

Mr. John Little moved, and Mr. Herbert Black seconded, and it was unanimously resolved, "That the proposal to formulate a Federal scale of charges, as detailed by the president, be generally approved."

A vote of thanks to the president and the vice-president for the valuable services they had rendered to the Institute by attending the Conference in Sydney was accorded on the motion of Mr. Anketell, Mr. Henderson, and Mr. W. M. Campbell, and was duly acknowledged by the president and Mr. Bates.

The President of the Board of Education has sanctioned an arrangement by which the bronzes presented last autumn to the Victoria and Albert Museum by M. Auguste Rodin will be lent to the Royal Scottish Academy (of which M. Rodin is an honorary member) for inclusion in their annual exhibition in Edinburgh this summer. The bronzes will be withdrawn from exhibition in London after Wednesday next.

LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council it was decided, on the recommendation of the General Purposes Committee, to invite applications, by public advertisement, for the position of valuer of the Council in succession to Mr. Andrew Young, who is retiring under the age limit, at a yearly salary of £1,500, rising by instalments of £100 every two years to £1,800.

The General Purposes Committee reported that considerable difficulty is being experienced by contractors in obtaining accommodation from banks and in getting material from merchants except on a prompt cash basis. They recommended that until the conclusion of the war or during such shorter period as may be determined by the Finance Committee, in all future contracts for the execution of works of construction or manufacture with regard to which the heads of the departments concerned consider it desirable that more frequent payments than those provided for by the standing orders of the Council should be made, a provision be inserted to the effect that heads of departments shall issue certificates for weekly advances on all such contracts of less than £2,000, and for fortnightly advances on all other works contracts.

To fill the vacancy in the Chief Engineer's Department consequent on the retirement as from the 15th inst. of Mr. J. E. Treforth, the assistant engineer in charge of the main drainage system on the north side of the Thames, the Establishment Committee recommended Mr. E. H. Tabor, an assistant district engineer in the main drainage branch. Mr. Tabor's present salary is £600, and they proposed that his commencing salary in the fresh position should be £800 a year (the amount received by Mr. Worth), rising by increments of £50 to £1,000 a year.

It was agreed that the boundary line of a Council school to be built in Mount Pleasant-lane, Hackney, shall be set back to a distance of 20ft. from the centre of the old centre of the lane, thus adding an area of 1,020sq.ft. to the public way.

The Improvements Committee reported as to the acquisition of property required for the widening of Graham-road, Hackney, at its junction with Mare-street, so as to allow a double tramway curve to be laid at that point (as part of the widening of Dalston-lane and Graham-road now in progress at a total cost of £10,800); for widenings of Lauriston-road, Church-crescent, Terrace-road, and Cassland-road, Hackney, as parts of tramways reconstructions; of the acceptance of land from the Crown Authorities, to enable a footpath on the south side of Eltham-road to be made of a uniform width of 12ft.; and of the acquisition of Nos. 78 to 92, even numbers, on East Hill, Wandsworth; in this case the work of setting back the frontages and adapting the premises for occupation will be carried out by direct employment of labour under the direction of the Committee.

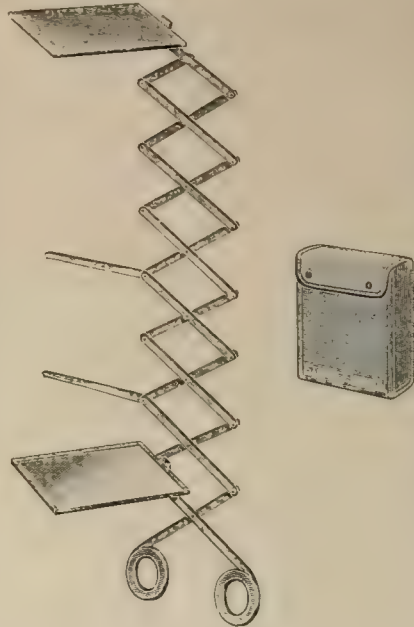
The Museums Committee recommended that no action be taken with regard to the suggestion made by the Greenwich Borough Council, the Society for the Protection of Ancient Buildings, and the London Survey Committee, that the Council should purchase for 500 guineas a structure at present used as a summer-house which is situate on private property at Croom's-hill, Greenwich, and which is stated to have been designed by Sir Christopher Wren.

STANLEY'S TRENCH PERISCOPE.

Novelty and compactness are the advantageous characteristics of this periscope, which we are sure will be welcomed by many of our readers at the front and on active service at home, to whom no more useful gift could be made by those of us who are eager to do something for their safety and comfort.

It is a thoroughly practical instrument, with strong, collapsible aluminium frame, with two spikes for fixing into the side of the trench. The mirrors are of carefully selected plate glass, size 5in. by 3in., well protected by metal sheaths. A spare mirror

is provided, and the whole is contained in a strong waterproof canvas case measuring 6 3/4 in. by 7 in. by 1 3/4 in. The price is 25s. complete, and it will be packed and delivered



free to any soldier at the front 2s. extra. Send him one—it may save his life.

The patentees and sole manufacturers are Messrs. W. F. Stanley and Co., Ltd., 286, High Holborn, London, W.C.

OBITUARY.

We regret to record the death of Mr. Hubert James Austin, principal of the firm of Messrs. Paley and Austin, ecclesiastical architects, of Lancaster, which occurred on Monday last at his residence, The Knoll, Lancaster, only four weeks after the decease of his wife. Mr. Austin was born in 1841, and was therefore in his 74th year; he was the youngest son of the Rev. Thomas Austin, M.A., rector of Redmarshall, County Durham. In 1860 he was articled for four years to his elder brother, the late Thomas Austin, of Newcastle-on-Tyne, afterwards the head of the firm of Messrs. Austin and Johnson. On completing his articles in 1864, he passed the old Voluntary Examination of the Royal Institute of British Architects, and entered the office of Sir Gilbert Scott, on whose staff he remained until he became associated with Mr. E. Graham Paley in 1868. Mr. Austin, who was a skilful draughtsman with pen, pencil, and in water colours, won the Pugin Studentship in 1867, and was one of the originators and first secretary of the Spring Gardens Sketch-book. In 1865 he gained the commission for Christ Church, Ashford, East Kent, and by Sir Gilbert Scott's permission the church was carried out from his designs. Subsequently Mr. Austin gained a number of church commissions in competition, including those for Mossley Hill, Bettws-y-Coed, Crewe (St. Barnabas), Cloughfold, and Crawshawworth, and the firm were also awarded the first premium for mountain churches offered by the Carlisle Diocesan Church Extension Society in 1873 for Mr. Austin's designs. In the second and final competition for Liverpool Cathedral, a 15th-century French type of design was submitted by Messrs. Austin and Paley, of remarkably fine proportions and skilful draughtsmanship, although the treatment of the spired dome and transeptal towers was somewhat crowded; this fine conception was illustrated in our issues of June 5, 12, and 19, 1903, and attracted much attention. The works carried out by Mr. Austin in conjunction with Mr. Paley comprised more than fifty new churches, and many restorations and enlargements, several asylums, railway stations, hotels, hospitals, banks, mansions, and schools, including the grammar schools at Sedburgh, Skipton, St. Bees, and Giggles-

wick, the last-named having a noteworthy domed chapel. Mr. E. G. Paley, who had been a pupil and partner with Edmund Sharp, died January 23, 1895, aged 72 years. One of Mr. Austin's most remarkable works was the restoration of Lancaster parish church (of which he had for many years been a warden), and the designing of the south porch, given by his wife as a memorial of her parents, the late Dr. and Mrs. Langshaw. Mr. and Mrs. Austin leave two sons, both in the profession, and three daughters. The funeral took place on Wednesday at Lancaster parish church and cemetery. We published biographies and portraits of Messrs. Austin and Paley in our issue of May 23, 1890.

Building Intelligence.

SOUTH ACTON.—Sir Aston Webb, R.A., has made plans for extending the chancel of All Saints' Church, South Acton, W., in memory of the late Bishop Hunter Dunn, who for many years was vicar of this parish. The chancel at present is very short and inadequate. An ambulatory is to be carried round the apse, and presumably the existing east end will be re-erected. The church was won in competition about forty years since by Messrs. Adams and Kelley, of Leeds, who carried out the work. The building is of red brick and stone, with a well-designed brick spire; but the facings have weathered badly, owing to the poor quality of bricks used. The original cost, however, was very small considering the style and size of the building. Various incongruous additions have since been made at different times, to the detriment of the grouping of the church. The cost of the intended work is estimated at £1,400. The scheme has been adopted by the memorial building committee.

Mr. E. W. Beech, master builder, Peterborough, and a member of the city board of guardians, died on Friday from a paralytic seizure, aged fifty-nine.

Plans and specifications have been submitted to the borough council of Haddington by Mr. G. Somervell Carfrae, C.E., Edinburgh, for the three-days' water-storage tank which the corporation have decided to construct near Myreside. The engineer has been instructed to advertise for tenders for carrying out the work.

By the death of Mr. Nathaniel Coulson Whear, at the age of seventy-eight, the borough council of Penzance have lost their sanitary inspector, who had served them efficiently and methodically since 1873. Mr. Whear also acted as inspector under the Food and Drugs Act and the Port Sanitary Authority. Before undertaking municipal work he was foreman with Messrs. Perkins and Caldwell, builders and contractors, of Penzance.

The Leith gasworks, which were the property of the Edinburgh and Leith Corporations Gas Commissioners, and cover an area of 3 1/2 acres, were sold on Friday by public auction in Dowell's Rooms, George-street, Edinburgh, for £13,000, £1,000 above the upset price. The site will be used in connection with the business of a local timber merchant. In consequence of the erection of new gasworks at Granton, the premises alike in Edinburgh Valley and in Leith are no longer required for gasmaking purposes.

It was reported to the Metropolitan Water Board at their meeting on Friday that a 20in. water-main, from Plumstead through the town of Woolwich and under the South-Eastern Railway, has been completed, and the water has been turned into two reservoirs at Plumstead hitherto disused. The execution of these works will result in a very considerable improvement in the supply to the North Woolwich area. The Port of London Authority are about to lay a 20in. main under the new Albert Dock, and on the completion of the dock entrance it will be necessary, the Works Committee reported, to connect this main with the Board's 20in. main passing through the Woolwich tunnel, and to lay a further 465 yards, at an estimated cost of £1,460, to complete this section of the work, and also to lay a further length of 1,040 yards of 20in. main in Stanley-road, Silvertown, to connect with an existing 18in. main at Silvertown Station, at an additional outlay of £3,900.

Corrente Calamo.

Every reader will regret to learn that the Architectural Association has been badly hit by the war. Not only has it lost for the time 350 members who are on active service, and the majority of whom are not being pressed for their subscriptions, but the falling off of students in the schools is very serious. Last year over seventy students had entered for the day-school, and the teaching staff had been engaged accordingly. Since the outbreak of war some fifty students of the day-school have joined the Army, and the evening students have drifted away altogether, and the schools have had to be closed. Every possible economy is being effected, and the teaching staff have voluntarily accepted reduced salaries. It is expected that the deficit on the session will amount to £1,000, and it is feared that the same difficulties will have to be contended with in the coming session. The outlook seemed so gloomy that it was suggested that the schools should be closed. The Advisory Council, however, strongly deprecated such a course and urged the continuation of the usual activities.

In response to an appeal by Mr. Maurice Webb, the president, the Institute has come to the rescue, and the finance and house committee, while regretting that the building debt on the Institute, and the loss of subscriptions, straitens its means, has recommended, and the council has sanctioned, a grant of £250, in addition to the £100 it contributes annually. Besides this, the council has a voice in the disposal of funds held in trust for educational purposes which enables it to afford the association further assistance. The accumulated balance of the Anderson-Webb Trust Fund amounts to £273, and the donors of the fund, Sir Aston Webb and Mr. Macvicar Anderson, have asked the council to sanction the payment to the association of £250 out of this balance. In making the request they recall the purpose for which the fund was instituted, and express their satisfaction that no better use could be made of the balance than to apply it in aid of the Association in this time of stress. These proposals received the sanction of the council at their meeting last Monday week. Thus the association will benefit at once to the extent of £600—a sum which may not recoup all its losses, but will, at any rate, help to smooth away immediate difficulties.

The Board of Trade has shown this week at the Goldsmiths' Hall on three days, including to-day, a number of specimens of modern German designs, in response to pressure by manufacturers and others, who have urged on the Board the necessity for encouraging closer co-operation between the manufacturer, the distributor, and the designer, with a view to preserving to British industries trade which has been lost by reason of the superiority of the German methods in developing "commercial art." The idea seems to be the endeavour to establish a similar organised association here to the Deutsche Werk-bund, an association of designers, manufacturers, and distributors, now numbering from two to three thousand members, which carries on an active propaganda by means of pamphlets and exhibitions, and by the publication of

an illustrated year-book. That there is need for some such effort few will deny. We are told, for instance, that more than half the wallpaper designs issued by the firms in this country are believed to have been designed abroad. For that we should incline to suggest a reason which will occur to most of our own readers, but which is not mentioned by the authors of the leaflet issued by the Board of Trade. There may quite well be more or less force in others which are put forward, notably the lack of individuality in design which characterises most of our own "art" furniture, etc., which is made for the million.

That, as we and others have repeatedly pointed out during the past few years, is primarily due to the defective methods of an "elaborate educational machinery," which certainly does not "develop the creative powers of our designers." We have tried to show how and why this is so in our reviews of the national competition works and those of the Royal College of Art for some years past. So has Mr. Reginald Blomfield; no charge of his in his letter to the *Times* of July 28, 1913, on which we commented on this page in our issue of August 1, 1913, has ever been fairly met. So have others, and we rather despair of the success of any new "Designing Industries Association," such as it is proposed to found, if something is not done to make our State-assisted art teaching real—till we cease to grind out art-masters, and make students into designers and craftsmen. We inclined favourably at the time, and said so on p. 792 of our issue of December 8, 1911, to the suggestions made by Mr. C. R. Ashbee in his book "Shall We Stop Teaching Art?" published by B. T. Batsford, and suggest its perusal to those now concerned in the matter. We did hope, we confess, as we said on this page in our issue of May 8 last year, that something was coming of the "national basis" foreshadowed by Lord Haldane at the Academy banquet last year, and which Mr. Pease, the President of the Board of Education, was, with the assistance of the Academy, "to co-ordinate the fine arts and the industrial arts," but he and Sir Edward Poynter are probably still only "inter-changing ideas"!

On the whole, we hardly think the exhibition at the Goldsmiths' Hall sufficiently representative—we mean that Germany and Austria do better cheap things than anything shown—excepting, of course, some of the better-class lithographs and colour-work. In the latter, as used in their cheap weekly papers, they are, of course, without parallel here. That they have flooded our schools with their cheap and bad lithographs of British historical events, buildings, and views, is the result of the combined patriotism and parsimony of our educational authorities, who cover their walls with these things, doubtless to impress their young pupils with the idea that only German artists are fit to illustrate the glories of Britain! The wallpapers shown are not up to much. It pays the German better to sell his designs to the British manufacturer than to sell the common varieties here printed. The floor-coverings are not much better. The textiles are better. We have little to learn from Germany in ceramics either as regards technique or taste. But Germany does better things for home-buyers. As regards cheap metalwork the German manu-

facturer has the pull of us. Some of the basketware, also, is better than our average. When all is said and done, it will probably be found that the German has set himself in business-like fashion to discover how much "art"—or something like it—he can give his customer capable of being produced by cheap manufacture, and that he has succeeded better than our home producers. We confess we are not over-anxious to run a neck-and-neck race with him on those lines. To any attempt to induce our people to buy really better things, and so keep out German rubbish, and foster the demand for beauty and fitness in British-made common things we heartily wish all success.

The Estate Market is certainly looking up again after its long depression. The Mart has once more been holding daily auctions, and there have been not only bidders, but buyers, for the lots offered. There was a briskness about it all coming like a welcome whiff, as it were, of the atmosphere of old days when Tokenhouse-yard was really busy. Properties have been changing hands, and they were not simply put up and bought in to keep things going. Of course, prices are lower, and they are likely to go down still more. But the great matter, after all, is movement: for the slow stagnation of the market was a loss and a cause of gloom to all concerned. One reason for the fall in selling prices is that buyers now need a higher rate of interest as the return upon their capital. Outgoings increase everywhere, and this must continue. So the only way out is to make a larger income somehow. There is very little building now going on, which fact gives owners a better chance of selling the existing houses, and those of moderate size have been selling at fair, though not full, prices; which is encouraging to both buyers and auctioneers. In the suburbs, even large old properties, thought hopeless, have been moving a little, owing to the better business now being done by boarding-house keepers, because of the many foreigners that are crowded into the country, and all such premises are at least becoming easier to let for this purpose.

As will be seen elsewhere in this issue, the Australian architects have resolved to attempt the formation of a Federal Council, consisting of two delegates from each State Institute of Architects, to deal with matters of federal interest, and any other questions referred to it by the different Institutes. It is proposed that the first meeting of the council shall be convened by the New South Wales Institute, and held at Easter, if possible at Canberra, and, if not, at Melbourne. It seems to have been recognised that the formation of an Australian Institute of Architects would have been desirable; but that would have meant the recasting of six different Articles of Association, and a revision of the qualifications of candidates for membership. What will evolve from the formation of the Federal Council remains to be seen. Like ourselves, Australian architects have their own special difficulties. As regards registration, for instance, they are in one respect worse off than we are. The six separate State Legislatures have powers, but the Federal Parliament, it seems, has none, under the Constitution to enact registration. So, for the present, that must be left alone by the Federal Council. Probably other hindrances

will be discovered in the way of united action; but, whatever they may be, we heartily wish success to our Australian brethren in their efforts to overcome them, and secure unity and consequent strength.

At the Whitechapel Art Gallery the spring show this year deals with Nature study and art. There are growing flowers, such as carnations and hyacinths, and near them designs suggested by these flowers to Persian artists in 16th and 17th-century tiles. Butterflies and moths are grouped together to form patterns for colour experiments in stained glass. There are some cases of moths and butterflies collected by Mr. Selwyn Image in all parts of London, a pale green *Geometra papilionaria* caught at Putney being, perhaps, the most beautiful of all. A welcome exhibit is a series of drawings by Cable-street schoolboys of a group of fungi brought to the school by one of the boys, whose father is a warder in the Tower. It had grown in the Tower moat. There is a collection of paintings, including a fine group of flower pieces by Mr. Clausen and Mr. Edward Stott's "Sunday Night," an early work, and a nice little landscape by Wilson. Mr. Teed, the director, is to be congratulated on his success in keeping the Whitechapel Art Gallery alive and interesting.

Fifty years ago, remarks the *Manchester Guardian*, the last of the great Victorian novelists first appeared in print. On March 18, 1865, "Chambers's Journal" published an article entitled "How I built Myself a House." It was unsigned; but we know now that it was the work of Mr. Thomas Hardy, then twenty-five years of age, and engaged in designing churches under the instructions of Sir Arthur Blomfield. "Chambers's" indexed Mr. Hardy's article under the comprehensive heading of "Familiar Sketches and Essays." One need not go to it for instruction, though his experiences in an architect's office evidently inspired Mr. Hardy's article. There is a smile in it still—for example, when the author pictures the house-builder's experiences when examining his property in course of erection from the 'vantage-ground of the scaffold, and tremblingly remarks to the foreman that they are a good height up. "Well, no," is the reply; "nothing to what it is sometimes (I'll just trouble you not to step upon the end of that plank there, as it will turn over), though you may as well fall from here as from the top of the Monument for the matter of life being quite extinct when they pick you up." About five years later Mr. Hardy's first novel, "Desperate Remedies," was published, and one of his characters does actually fall from a scaffold, with tragic consequences.

The conclusion of the inquest, which is being resumed to-day, into the deaths caused by the collapse of a reinforced concrete building at Bury, Lancashire, last week's sittings of which we report in our "Legal Intelligence" will be awaited with interest. Till then, comment, of course, is barred; but some of the evidence given yesterday week was of a remarkable character, and should receive the very serious consideration of all concerned in the erection of reinforced-concrete works.

The death is announced of Mr. Edward Sykes, late surveyor and consulting engineer to the Chaddle and Gately Urban District Council.

PROFESSIONAL AND TRADE SOCIETIES.

THE ART OF CONSTANTIN MEUNIER.—In the Edinburgh College of Art, on Thursday in last week, a lecture was given by Mdlle. Maria Biermé on "The Art of Constantin Meunier." Mr. Morley Fletcher, the director of the college, in introducing the lecturer, explained that Mdlle. Biermé was the authoress of several notable books on modern art, one of which had led the Belgian Government to create the chair which she held at Liège, where she was appointed Professor of Literature, and Lecturer on Art in the State Normal Schools of Belgium. Mdlle. Biermé described the parentage and childhood of Meunier, and spoke of his early studies as a sculptor under the master Fraikin. But, being out of sympathy with the conventionality of the work demanded at that period, Meunier abandoned sculpture, and became a painter, working for many years at realistic subjects, and living in considerable poverty on account of an early marriage and the responsibilities of a family. For the greater part of his life he painted subjects of a realistic kind, both in his own country and in Spain, and returned at the age of fifty to Louvain. It was only at the age of fifty-four that Meunier, being greatly impressed with the life in the mining district in which he lived, turned at last to sculpture, and produced the great work of his life. Mdlle. Biermé showed a series of lantern slides of his most notable works, pointing out the relation of his work to the incidents of a noble and devoted life.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.—An interesting lecture, descriptive of the annual excursion last year of the Birmingham Architectural Association to Chartres, was delivered on Friday night at a meeting of the association at the gallery of the Birmingham Society of Artists, by Mr. Francis Goldsborough. The lecture was illustrated by lantern slides, and, in addition, there were exhibited a number of paintings and drawings, by members of the association, of buildings and places of interest visited during the excursion.

DECORATION AND REALISM.—As the concluding lecture of the winter course at the College of Art, Edinburgh, Mr. Morley Fletcher, the director, delivered an address on "Decoration and Realism." The lecturer spoke of the danger that students might fall into of too great an absorption in technical study, forgetting that the masterpieces of art that we inherited from ancient times were made by men of the greatest mental power and perception of their age, not by men who had merely developed technical skill. He warned them against the confusion of thought shown by an inexact use of artistic terms, taking as an example the common use of the terms "decorative" and "realistic," as applied to the arts generally. Considering first the case of sculpture, Mr. Fletcher made a distinction between the various kinds of work that take a definite share with architecture in the expression of a general idea or purpose, and those that are free or independent. He gave lantern illustrations of both ancient and modern examples of each kind, showing the wide range of variation in the degree of realisation of form in each class, according to lighting, position, and the character of the surrounding architecture; the only essential difference between the two kinds being, that a work of independent sculpture, such as a statue or group, was in itself the complete expression of its idea, while so-called "decorative" sculpture shared in that expression with other arts. Turning from sculpture to painting, he gave examples of the same two classes of work, showing in the case of decorative painting the choice of material had great importance in limiting the range of the possible degree of realisation of form and colour. He described the relative technical characteristics of mosaic, fresco, and tempera, and explained the dangers for the mural painter in the great range of possible realisation afforded by oil paint. These dangers he showed to have been mastered in the later work of Puvis de Chavannes. In the great freedom of inde-

pendent pictorial work the mere representation of facts and the modern reaction against realism had led to a pseudo-decorative kind of painting in which many of the old beautiful qualities of fine craftsmanship and skilful work had been sacrificed to a very slight measure of superficial design in form and colour, the old mastery of complete and finished expression being rarely seen in modern popular work. Mr. Fletcher held it to be a disadvantage to limit the scope of painting to design that was mainly in one plane, or to abandon the traditional usages of painting in the attempt to produce effects that belonged more properly to other media. He advised the student to study all the resources possible in his work, and to remember that the sense of reality which was felt in all the great expressive masterpieces of art depended on consistent design no less than did the character that they called decorative. Concluding, Mr. Fletcher pointed out that the arts were one in their base or foundation, and each might serve either (a) in harmony with other arts in a general design, or (b) independently in free expression; these two kinds were not properly described as decorative and realistic—a better distinction was between the decorative or co-ordinate and the free; there was no subordination of one art to another, but there might be a co-ordination under one controlling design in which all the arts employed must harmonise with one another; all good art had a decorative character if it was put in its right place; mere realism was not art, but the real might be used in varying degree in all art; and consistent design was equally essential in every kind of work.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Dr. George Neilson, Glasgow, delivered a lecture to the members of the Edinburgh Architectural Association in the Gartshore Hall, George-street, Edinburgh, on the 17th inst. Mr. T. Forbes Maclean, president, occupied the chair. Dr. Neilson had for his subject the "Mote, Castle, and Peel." He traced the evolution of each, and the relationship they had to each other. He set forth the uncertainty of the earlier antiquarian opinions in regard to the mote, and showed the line of evidence which established their having been introduced into Great Britain at the time of the Norman invasion. Historical examples were cited, including an interesting chapter on Carlisle, showing—as had been discovered by the Rev. Dr. Wilson, the historian of Cumberland—that before the castle was built by David the First of Scotland, the mote had existed, and was removed in the course of operations subsequent, at any rate, to the 14th century. The connection between the mote, considered as a fortified residence, and the mote as a seat of feudal law, was dealt with. The legal memory of the mote was regarded as a survival of a baronial phase in early society. The place of the peel in Scottish history was finally considered, and it was shown that the peels originally introduced during the usurpation of Edward the First were palisaded enclosures of the nature of encampments. Their interesting place in history was that they had been used both as the camps of English invaders and the forts of Scottish defenders of national independence. The lecture was illustrated by a number of slides, amongst which were several from old prints, maps, and tapestries.

STREET ARRANGEMENTS.—In a town-planning lecture, delivered at the Birmingham University on Friday, Mr. Barry Parker, F.R.I.B.A., treated chiefly of "places" and open spaces, road junctions, and crossings, both from the point of view of their architectural possibilities and from that of traffic requirements. Mr. Parker pointed out that the town-planner's chief debt to Camillo Sitte arose from giving a place or open space a complete sense of enclosure, and from his having laid emphasis upon the fact that the town-planner must so plan all his streets as to create street pictures, closing the street picture at suitable points, and never allowing it to run on into bewildering perspective. He went on to consider many

suggestions which had been made, with a view to facilitating the distribution of traffic at points at which streets crossed, pointing out the difficulties which it should be anticipated would arise if the gyratory system were adopted, and the limitations of this system. He also considered Camillo Sitte's suggestion that instead of two streets crossing in such a way that each continued its direct line, a street, say, running east and west should not pass straight across one running north and south, but that the traffic going down it should join that going down the one running north and south, and after continuing with it a short distance should then turn out into a street following the east and west direction it wished to pursue, and showed that though this did not minimise the number of points at which vehicles risked a collision (as Camillo Sitte claimed), it did somewhat reduce the actual risks of collision. At the same time, where traffic was dense enough to require police regulation, it became disadvantageous, and at best its effect would be to delay traffic going east and west by making it turn two corners when it need not have turned any. He pointed out also that it was a town-planner's business to bear in mind that loss of momentum, as well as of time, to street traffic, meant loss to the community. He drew attention to the fact that the natural assumption that traffic requirements would be facilitated by providing space at the crossing of streets, or at the point on which several streets converged, is more frequently false than true, that its effect is often only to produce confusion which would not have arisen if the space had been kept small enough to keep each line of traffic compact, and following a definite route. Coming to garden squares, small parks, and green open spaces, he claimed that the town-planner should not lose sight of the desirability of so disposing these that not only those who had leisure to make use of them, but those busy men who had no time to spend in parks, should get pleasure and benefit from them when pursuing their ordinary avocations, arranging them so that the busy man might not infrequently pass, if not through them, at any rate near them, and where he got glimpses of them.

TOWN PLANNING IN ANTWERP.—M. Portielje, hon. secretary of the Royal Society of Architects of Antwerp, delivered an address on Friday at University College on "Town Planning in Antwerp, Past and Present," the third of six lectures on the architecture of Belgian towns arranged by the Carpenters' Company. Lord Reay occupied the chair. The lecturer traced the rise and early beginnings of Antwerp, and described some of the main architectural beauties of the city, demonstrating by the aid of lantern views how grievous has been the havoc wrought among those fine specimens of Flemish architecture by the German 17in. howitzers. He also explained various schemes of improvement and replanning, which were drawn up at the request of the late King Leopold a few years ago.

WILTSHIRE SURVEYORS' ASSOCIATION.—The quarterly meeting of this association was held at the Angel Hotel, Chippenham, on Saturday afternoon. Prior to the commencement of business the members were entertained to luncheon by the president (Mr. J. George Powell, county surveyor). The Mayor (Ald. J. C. Coles) proposed "Success to the Association," which was responded to by the president and Mr. W. H. Stanley (chairman of the committee). At the business meeting which followed, Mr. Evans (assistant county surveyor) was elected a member of the association. It was decided to hold the next quarterly meeting at Trowbridge. The president accorded a hearty welcome to Mons. P. Dingens (surveyor of Nieupoort, Belgium), and afterwards gave a brief address on the effect of modern traffic on modern roads. The Road Board would like him to hold his hand in respect of the scheme of road reconstruction now in progress, but as 60 per cent. of the work was done, he hoped to be able to convince them that it would be better and more economical if they allowed him to complete the work. A

paper previously circulated to the members on the local water and sewage systems, prepared by Mr. Adams, borough surveyor, was taken as read, and the members afterwards visited the works, and inspected the workmen's dwellings recently erected by the council. On their return to the Angel Hotel, the members were entertained to tea by Mr. Adams.

COMPETITIONS.

LIVERPOOL.—The Workmen's Dwellings Competition Liverpool drawings are on view at the Walker Art Gallery for the inspection of the housing committee, there being eighty-seven sets of plans and 333 sheets of drawings, which took ten days to hang. A public view will be held shortly. The site for this new housing scheme is known as the Rathbone-street area. Mr. Henry Hartley, F.R.I.B.A., the assessor, reports that out of all the designs sent in there are very few suggestions to break away from the type of planning which has already been carried out by the same authority in Liverpool within the city area, and not one scheme shows any material advance upon what has already been done there. Premiums of £100, £50, and £25 will be paid for the three designs which have been chosen; but the committee still has the premiated schemes under further consideration. The following is the order in which the premiums have been awarded. First, Messrs. E. F. S. Biram, Licentiate R.I.B.A., and Fletcher, George-street, St. Helen's; second, Mr. E. G. Badger, Municipal-buildings, Liverpool; third, Messrs. J. T. Halliday, A.R.I.B.A., C. Paterson, A.R.I.B.A., and Gustav Agate, John Dalton-street, Manchester. Mr. Hartley, at the outset of his report, says that the task of coming to conclusions as to the relative merits of the designs was made difficult owing to the high standard adopted by many of the competitors. Well-designed elevations with regard to a picturesque scheme were fully considered in so far as economy would allow, and also good ventilation, sunlight, and control of streets, houses, and recreation-ground; economy of floor space, comfort, and convenience to the occupiers.

SPALDING CHILDREN'S HOMES.—At the last meeting of the Spalding Board of Guardians it was reported that 39 plans had been sent in for the proposed children's homes, and of these the house committee had selected seven or eight to submit to an assessor to go through and select the best. The estimated cost was stated to be in the neighbourhood of £1,000. The Clerk reported that the Local Government Board would not sanction any loans for capital expenditure until some time after the conclusion of the war, and this, he took it, would mean that the scheme could not be proceeded with at the present time. The Hon. Gerald Walsh, Local Government Board Inspector, suggested that the Guardians should postpone the scheme for the present, in consequence of this decision of the Treasury. He intimated, however, that the Local Government Board were determined that the children should be removed from the workhouse, and that it would be postponement only. Rev. W. M. Benson said the estimates for the schemes sent in varied from £400 to £3,000, but even to spend £1,000 on homes for 18 children was ridiculous. The Board approved of the postponement of the scheme.

WHITEHAVEN HOUSING COMPETITION.—Members and licentiates of the R.I.B.A. are advised that the Conditions of the above competition are not in accordance with the Institute Regulations for Architectural Competitions, and the competitions committee are in correspondence with the promoters with a view to their amendment.

In the Court of Appeal, on Tuesday, Lords Justices Buckley, Pickford, and Bankes upheld the decision of a King's Bench Divisional Court (Lord Chief Justice Reading and Justices Bray and Shearman), and agreed that the London County Council were entitled to refuse cinematograph licenses to a company a proportion of whose shareholders were alien enemies.

Correspondence.

RECRUITING FOR THE FORCES.

To the Editor of the BUILDING NEWS.

SIR,—I hope you will again allow me space in your columns to communicate with your readers on the subject of service in the Forces of the Crown.

Now that we are approaching the commencement of the great struggle in Europe, it behoves every man, whatever his age, to seriously consider whether he himself is doing all in his power to support Lord Kitchener and the Government in their appeal to the country to organise resources. Every man who is able to join the Army should do so at once, and those really unable to enlist should prepare themselves for the future, when they may be free, or when the whole reserve of the nation may be called on for a great united effort.

The new Expeditionary Force and its reserve battalions are, of course, the first thought of the Government and the nation. But provided a man is keen, and has grasped in true perspective the meaning of military training and service, he can find a place in the present military organisation of the country, whatever his age and whatever his capacity.

The Volunteers are being organised for those who cannot join the Regulars and Territorials, and although they occupy the last place in the military scheme, they can give real support to the Government. Every man who accepts the War Office Conditions with regard to these corps, thereby expresses his entire trust in Lord Kitchener, and shows that he appreciates the relative value of part-time training and full-time service.

The headquarters of the Architects' Volunteer Training Corps has now been made an official enrolment office for the Army, and is continuing its work of recruiting for the Royal Engineers and Sanitary Companies, both of which services are still in need of recruits. In addition to all kinds of skilled workmen, draughtsmen and surveyors can be accepted for the former, and men of sanitary experience are in demand for the latter.

The corps, which has now become the 4th Battalion (Architects') Central London Regiment of Volunteers, can offer excellent facilities for the men who are above military age, or who cannot at present join the Army.

The training centres are at St. John's Wood, Westminster, and Holborn, in addition to Dulwich College, Loughton and Boreham Wood, where there are splendid areas for field exercises and manoeuvring.

A school of arms has been started at Erasmus-street, Millbank, and this is open to all members who have become efficient in drill and musketry.

As a result of the War Office Regulations and some months of uncertainty, the corps is now composed of really keen men, difficulties are being met in the right spirit, and the prospects of service are most encouraging, but it is essential that the battalion, to be of use, should be recruited to full strength as soon as possible.

All keen recruits will be most welcome, whether they come singly or as an organised body. Any corps wishing to amalgamate with and come into the 4th Battalion C.L.R. Volunteers will obtain every facility attached to the regiment, and will be able to retain its identity as far as is compatible with efficient organisation and discipline.

Join the Army at once if you can; if not, join the Volunteers.—I am, etc.,

ALAN POTTER,

Chief Recruiter, 4th Batt. C.L.R.V.

18, Tufton-street, S.W.

The Commissioners of Sewers have agreed to the plan of the proposed new road from Dartford to Erith.

Mr. W. G. H. Browne, for the past twelve years surveyor and inspector of nuisances to the Bolsover Urban District Council, has been appointed supervising sanitary officer for the colony of British Guiana, and leaves Bolsover at the beginning of April.

Our Illustrations.

"CARIAD," GORING-ON-THAMES.

This riverside resort, shown by the accompanying plan and views, is a comfortable and charming country-house, lately built in a thorough style by the Earl of Shrewsbury and Talbot from the designs of Mr. W. T. Walker, F.R.I.B.A., of Finsbury-square, E.C., all the internal treatments and furnishings being in accord with the character of the building. "Cariad" occupies a finely-wooded site, and every care has been taken to avoid anything approaching a display of stateliness, the idea aimed at being more associated with the unassuming character of a week-end cottage fit for a nobleman's use. The plan is of a special kind, arranged on a long line parallel to a sunk right of way, the lower or riverside garden being reached by a subway having a stepped approach from the higher grounds immediately round about the house. There is a boathouse midst the pollarded willows on a charming island formed by the Thames backwater skirting the property. The entrance-lodge is a particularly pleasing and unpretentious little building, which we shall also illustrate shortly. The walls of the house are of red brick and are built hollow. Above the ground-floor story the construction is framed with English oak in half-timbering, and tile roofings set out on old historic lines. The floors are made soundproof by slag-wool, and the equipment is up to date. The lighting and heating of the premises provide all the last improved systems carried out in a very complete manner. Messrs. W. Lawrence and Sons, of Finsbury-circus, were the builders. Messrs. S. and E. Collier, Ltd., Grovelands, Reading, made the facing bricks and tiles, the bricks being their 2in. old-fashioned hand-made bricks in mixed colours, and the effect is very pleasing. The roofing tiles were also of the old-fashioned hand-made quality, and in mixed colours. The Crittall Manufacturing Co., Ltd., of Braintree, made the metal windows, which are of their patent "Universal" section, with bronzed gutters for collecting condensation water. These casements have a number of unique advantages. The glass, sight, and rebate line is the same for casements and fixed lights. All types are made from solid rolled sections, and double weathered, without the use of any screwed on or riveted on pieces to form the weathering. The fittings were all suitably designed to harmonise with the surrounding work, bronze fittings being supplied on certain casements, and blacked iron fittings on others, depending on the situation of the windows. The heating installation was carried out by Messrs. Chas. P. Kinnell and Company, Ltd., 65 and 65a, Southwark-street, London, S.E., on their "low-pressure" hot-water system, and Kinnell "Indispensable" control valves were fitted to all radiators. These valves, by means of an internal diaphragm, can be so set and fixed that notwithstanding that it is possible to open or close the valve at will, and partially or entirely shut off the circulation to any given radiator, yet at no time can a larger volume of water pass to the radiator in question than that for which the valve has been adjusted. By this means a perfectly even and uniform heating up of the whole system is insured. A complete system for domestic hot-water supplies was also installed, the supply of hot water being furnished by a large boiler of the dome-top pattern, fitted with cross-tubes and a firebox. We shall illustrate some other drawings of the lodge, house and garden front, and boathouse, etc., at an early date.

CARNEGIE LIBRARY, CHORLTON-CUM-HARDY, MANCHESTER.

Two libraries of similar size have lately been erected at Manchester, the one here illustrated and another at Didsbury, both being on triangular sites, which necessarily gave a special character to their planning. The Chorlton-cum-Hardy building is in a Late Renaissance type; but the other differs, being decidedly modern Gothic in style.

Mr. Henry Price, the Manchester City Architect, has been good enough to lend us photographs and plans, with sections, of both these libraries, and we shall illustrate the Didsbury branch shortly. The plan now given so clearly shows the arrangements adopted for the open-access lending department and the flanking positions for the reading-rooms attached to the stack-room, that little need be added here, while the axial section through the entrance and domed hall complete the information respecting the lay-out, which is compact and capably lit. The supervision from the staff counter makes a feature in the scheme.

NO. LXX. NEW BOND STREET.

This building is being erected from the designs and under the supervision of the architects, Messrs. Palgrave and Co. The structural work is of fireproof construction. The façade is being carried out in Sicilian marble up to the first floor, with Portland stone above. The two sculptured figures surmounting the pilasters are 8ft. high and represent "Art" and "Commerce," the sculptor selected by the architects being Mr. L. F. Roselieb, R.B.S. The shopfront and enriched three-tier segmental bay will be in bronze. The general contractors are Messrs. A. J. Staines and Co., Ltd., 154, Great Titchfield-street. Messrs. Palgrave and Co. will also design the rebuilding of the adjoining premises—No. 71, New Bond-street, W.

"THE STUDY," CULROSS, PERTSHIRE.

A description of this illustration will be found in our first article elsewhere this week.

A Local Government Board inquiry is to be held at Ipswich on Tuesday next into an application by the corporation for sanction to borrow £6,220 for the provision of a smallpox hospital on Foxhall Heath.

At the last meeting of the Wiltshire County Council, Mr. Powell, the county surveyor, drew attention to the fact that in contracts for road materials in urban and rural districts in the county the estimates for the year show an increase of about £7,000.

The completed Church of St. Gabriel, Bounds Green, Tottenham, has been consecrated by the Bishop of London. The first part of the church was built and consecrated in 1906. The total cost of the building has been about £11,000, exclusive of £300 still required for furnishing.

A special meeting of the Plymouth Corporation Works Committee was held on Monday, at which the question of the reorganisation of the staff of the works department was considered. It was decided to propose the appointment of Mr. J. C. Trounson as deputy borough surveyor; Mr. Cecil P. Stowe, late of the Devonport borough surveyor's office, to have charge of the drawing-room staff; Mr. W. G. Goad being recommended as building inspector for the Plymouth and Stonehouse areas, the Devonport area to be left vacant for a temporary appointment to be made.

Under the auspices of the Society of Architects, a concert will be held on Wednesday, April 14, in the King's Hall, Holborn Restaurant, commencing at 8 p.m. Members' or visitors' tickets (price 2s. 6d. each, five for 10s.) may be obtained from the secretary at 28, Bedford-square, W.C. Members may introduce friends, including ladies, by whose kind concession smoking will be permitted. The concert will take the place of the annual dinner this year. Any profits will be handed to the Architects' War Committee, earmarked for the purposes of the professional employment committee of that body.

The council of Liverpool University invite applications for the Chair of Civic Design associated with the School of Architecture. The duties of the professor will commence, and the appointment date, from October 1, 1915. The appointment will be for four years, the period during which the endowment of the Chair is secured. The stipend is fixed at £400 per annum. The professor will be allowed, while in residence, to carry on the practice of his profession on conditions already determined by regulations. Such work, however, must be undertaken only to such an extent as shall not interfere with the duties of the Chair. Applications are to be sent to the Registrar, Mr. Edward Carey, on or before May 10.

WATER SUPPLY AND SANITARY MATTERS.

THE SEWERAGE OF STOKE-ON-TRENT.—

The Stoke-on-Trent Corporation discussed at great length at their last meeting recommendations by the sewage-disposal committee for a new sewerage scheme for the Stoke district. The committee had considered three alternative schemes of extending and improving the present Stoke works at a cost of £35,000, of acquiring a new site, constructing a new outfall-sewer, and of erecting new works at Strongford, near Tittensor. The committee recommended the council to proceed with the Strongford scheme, which was advised by their sewage engineer, Mr. W. H. Makepeace, and approved by Mr. Wilcox, consulting sewage engineer, of Messrs. Wilcox and Raikes, Birmingham. Alderman J. Kirkham, chairman of the sewage committee, in moving the recommendations, said the Stoke works had become waterlogged, owing in a great degree to mining subsidences, and the committee did not think it economical to extend or reconstruct those works. The sewage-flow to Strongford, where the proposed site was 60 acres, would be by gravitation, and so obviate the expense of pumping. If they proceeded to enlarge the Stoke works, they would perpetuate a principle which they knew to be bad—of maintaining six separate sewage-works under separate managements. If they adopted the Strongford scheme, it would be an important step towards centralisation, making it possible for a further generation to build up a scheme for disposing of the whole of the sewage of the Potteries and adjacent districts at one works and by one staff. Eventually an amendment was passed by agreement approving the sewage committee's recommendations, but stipulating that no expenditure should be incurred, except in securing an option on the site, during the war. After the amendment had been passed, the town clerk said one of the landowners concerned had refused to sell, and an application for Parliamentary powers would be necessary.

WELLINGTON, SALOP.—At a meeting of the urban district council of Wellington, Salop, on Friday, a communication was read from the Local Government Board stating that they had considered the report of the inspector who held an inquiry recently respecting an application for a loan by Wellington Council of £9,625 for sewerage and sewage-disposal. The Board understood that it was proposed to purchase 56 acres of land at £135 an acre, and only a small portion of the land would be required for the scheme. They could not assent to that course. If the scheme was to be sanctioned, it would be on the understanding that the surplus land would be vended by the council. A resolution was carried to the effect that a reply be sent to the Board that the council would be prepared to offer for re-sale the land that was not required.

Mr. J. H. McDonnell, borough surveyor of Lyme Regis, has received a commission in the Royal Engineers as second lieutenant.

The Ossett Corporation have granted increases of salary to Mr. H. Holmes, borough surveyor, from £275 to £300 per annum, and to Mr. T. W. Wilson, town clerk, from £150 to £175 per annum.

Mr. W. H. Luther, managing director of Messrs. F. Braby and Co., a well-known firm of engineers and ironmasters, has died at Glasgow. Mr. Luther was one of the best organisers in the iron and steel industry.

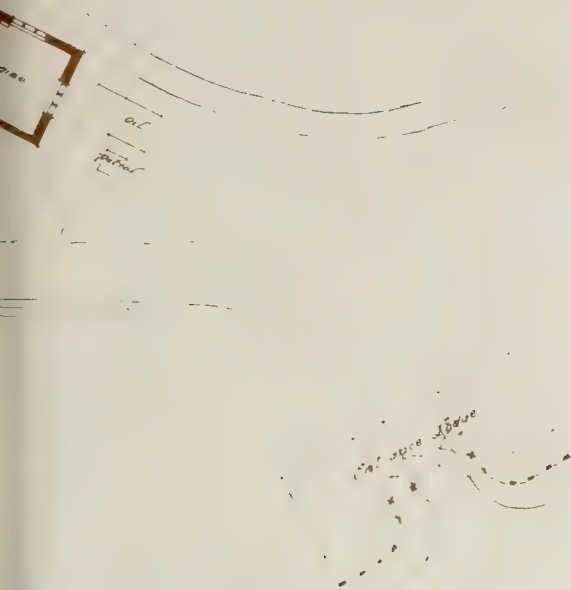
At Margate, on Monday, Mr. H. S. Stewart, an inspector under the Local Government Board, held an inquiry as to an application from the urban district council for sanction to borrow £14,957 for the provision of workmen's dwellings.

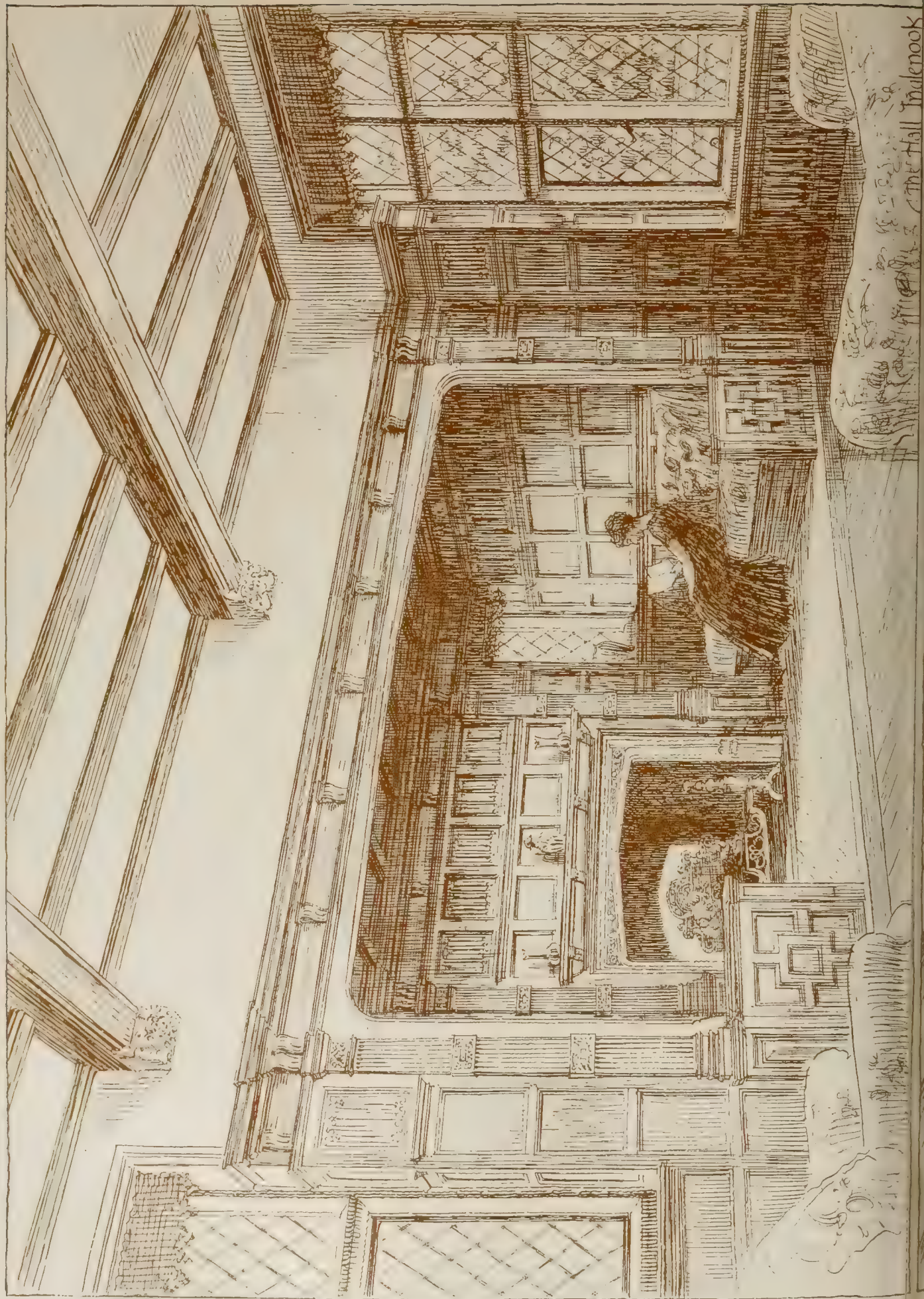
At a cost of £23,500, the freehold of the site of Columbia Market, Bethnal Green, has been acquired from Mr. Burdett-Coutts by the London County Council, and a portion of the site will be used for the erection of an elementary school to accommodate 1,200 children.

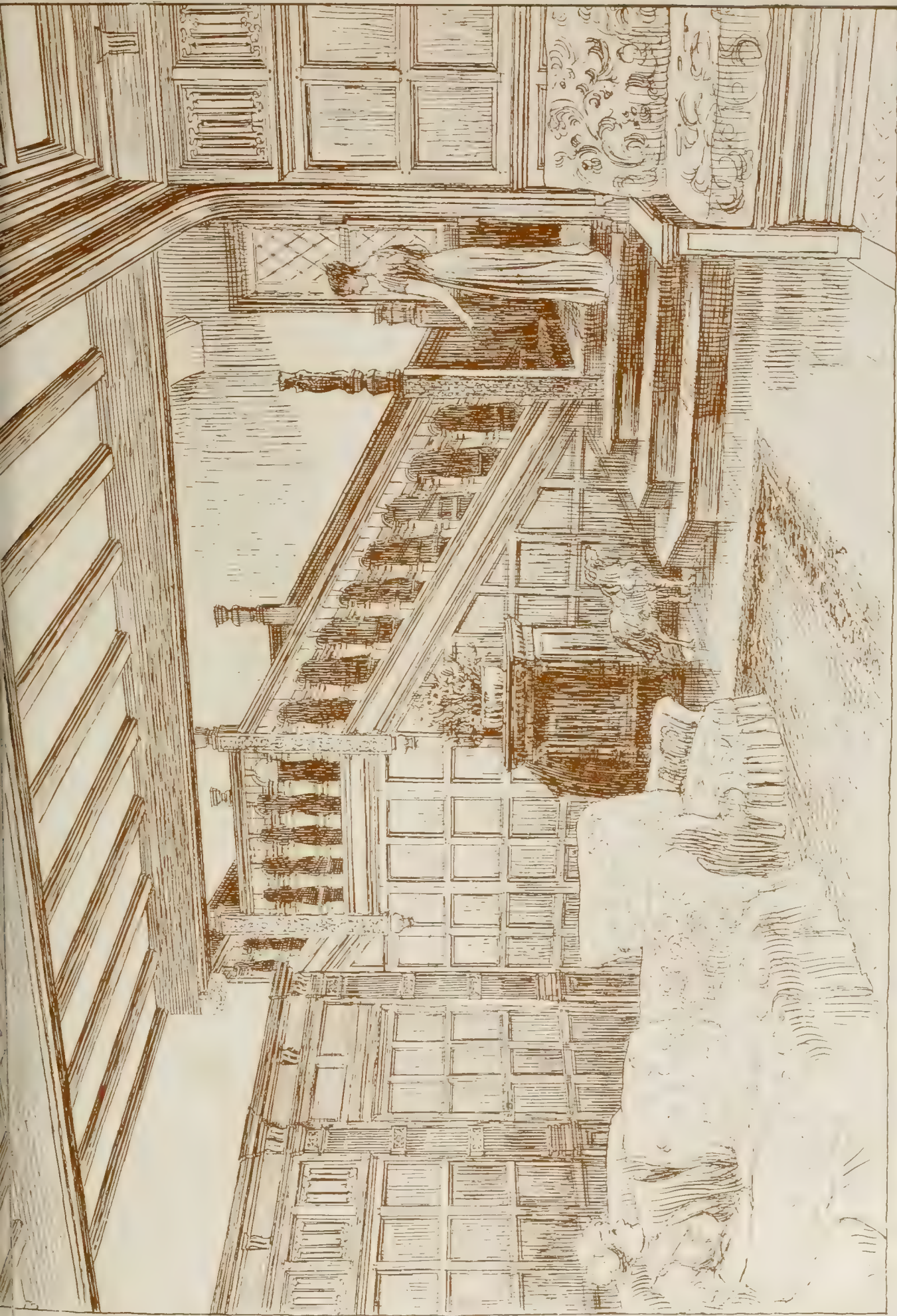
The twenty-sixth annual meeting of the Water of Leith Purification and Sewerage Commissioners was held on Friday in the City Chambers, Edinburgh. The clerk reported that the arbiters (Sir Thomas Hunter and Mr. Allan Carter) appointed to consider the question between the Commissioners and the Edinburgh and District Water Trust regarding the cost of maintenance of reservoirs, and the increased risks and liabilities consequent upon works of the Commissioners thereon, had issued their award, giving the water trustees the sum of £4,442 as against their claim of nearly £20,000.



ENTRANCE FRONT OF "CARIAD," GORING-ON-THAMES, FOR THE EARL OF



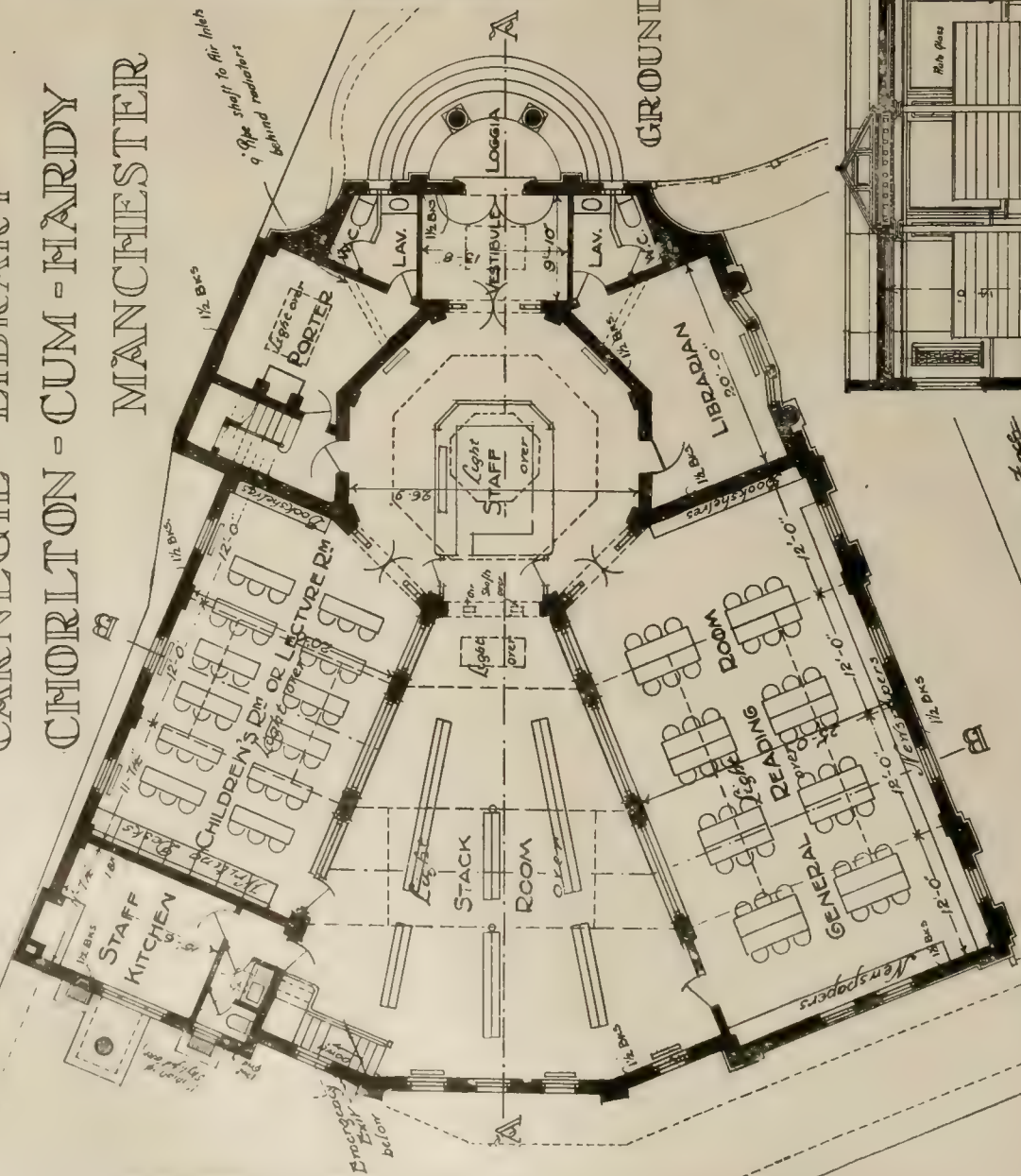




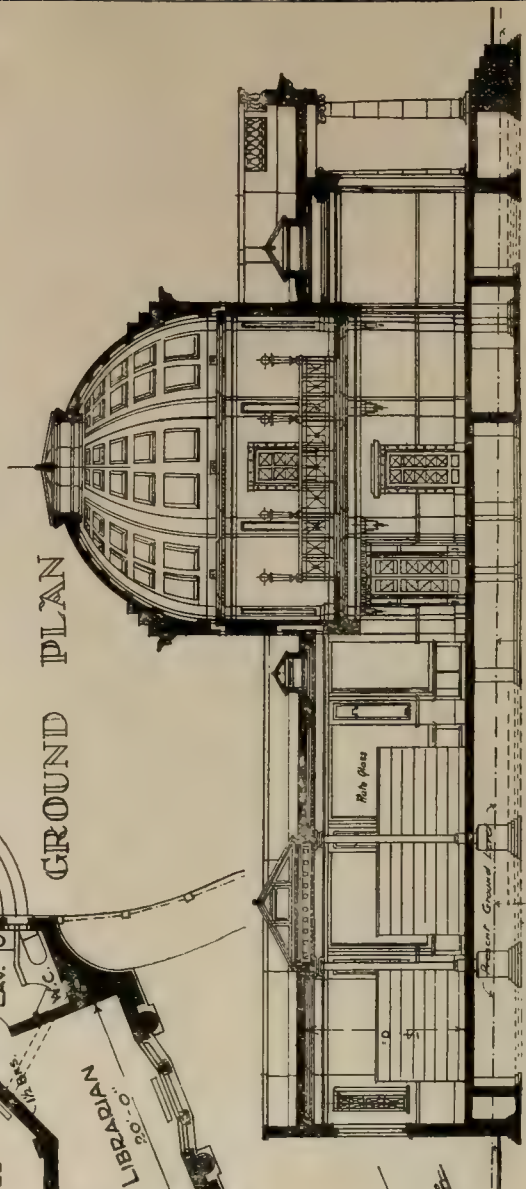
THE HALL, "CARIAD," GORING-ON-THAMES, FOR THE EARL OF SHREWSBURY AND TALBOT, K.C.V.O.

Mr. W. T. WALKER, F.R.I.B.A., Architect.

CARNEGIE LIBRARY
CHORLTON - CUM - HARDY
MANCHESTER

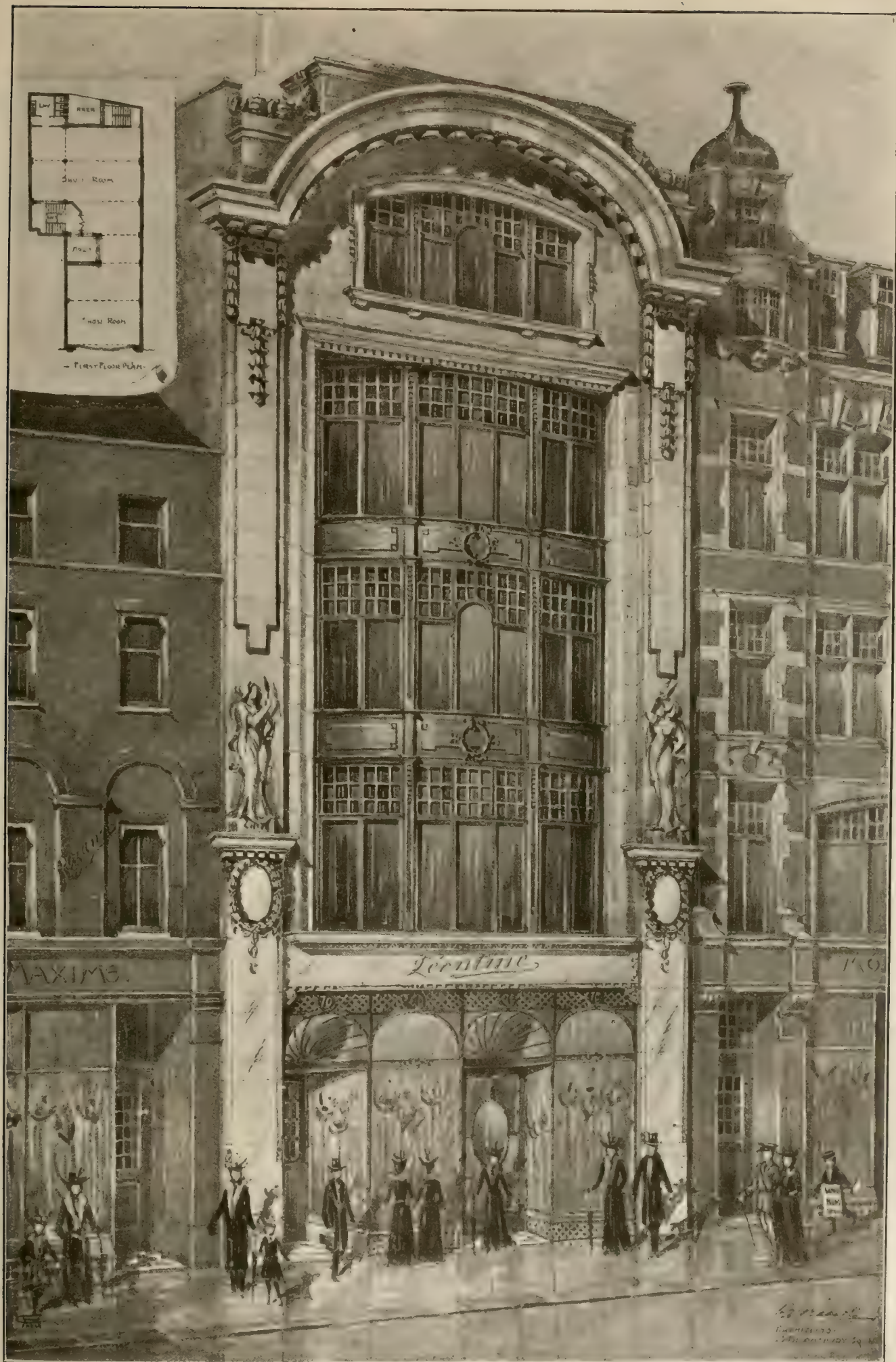


GROUND PLAN



NON FINE.

Mr. HENRY PRICE, City Architect, Manchester.



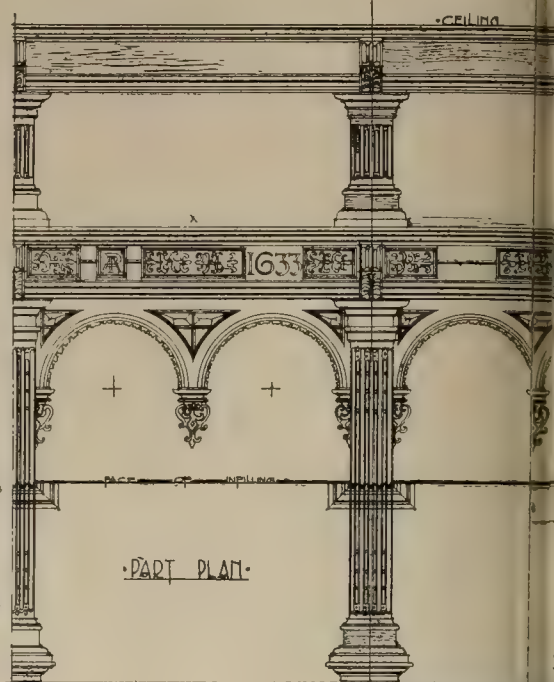
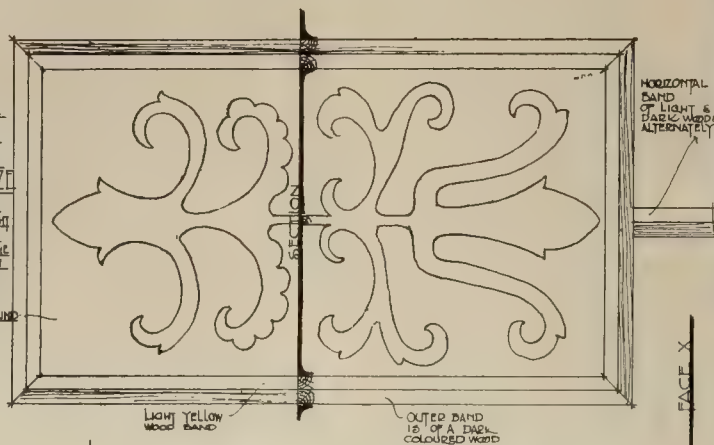
No. LXX., NEW BOND STREET, LONDON, W.—Messrs. PALGRAVE and Co., Architects.

"THE STUDY" # CULROSS #
 17TH CENTURY # OAK # PANELLING
 WITH INLAID FRIEZE BEARING DATE 1633.

FULL SIZE
 OF INLAID
 DESIGN IN
 LOWER FRIEZE

NOTE THE INLAID
 WORK IS OF A LIGHT
 YELLOW COLOUR
 WITH A STRIP OF THE
 DARK WOOD FORMING
 THE INNER BAND
 ROUND PANEL

OAK BACKGROUND



ELEVATION OF
 THREE BAYS

SCALE OF 1 2 3 4 5 6 7 8 9 10 11 12

CEILING CORNICE

1/2 FRONT
 ELEVATION
 OF CARVED
 OAK TRUSSES
 SUPPORTING
 CORNICE

SIDE
 ELEVATION
 OF TRUSS

MONOGRAM
 IN FRIEZE
 INLAID SIMILAR
 TO PANELS

INLAID
 FRIEZE

CARVED TRUSSES
 SIMILAR TO ONES
 OF PRINCIPAL
 CORNICE HERE

PLAIN
 FRIEZE

ARCHITRAVE

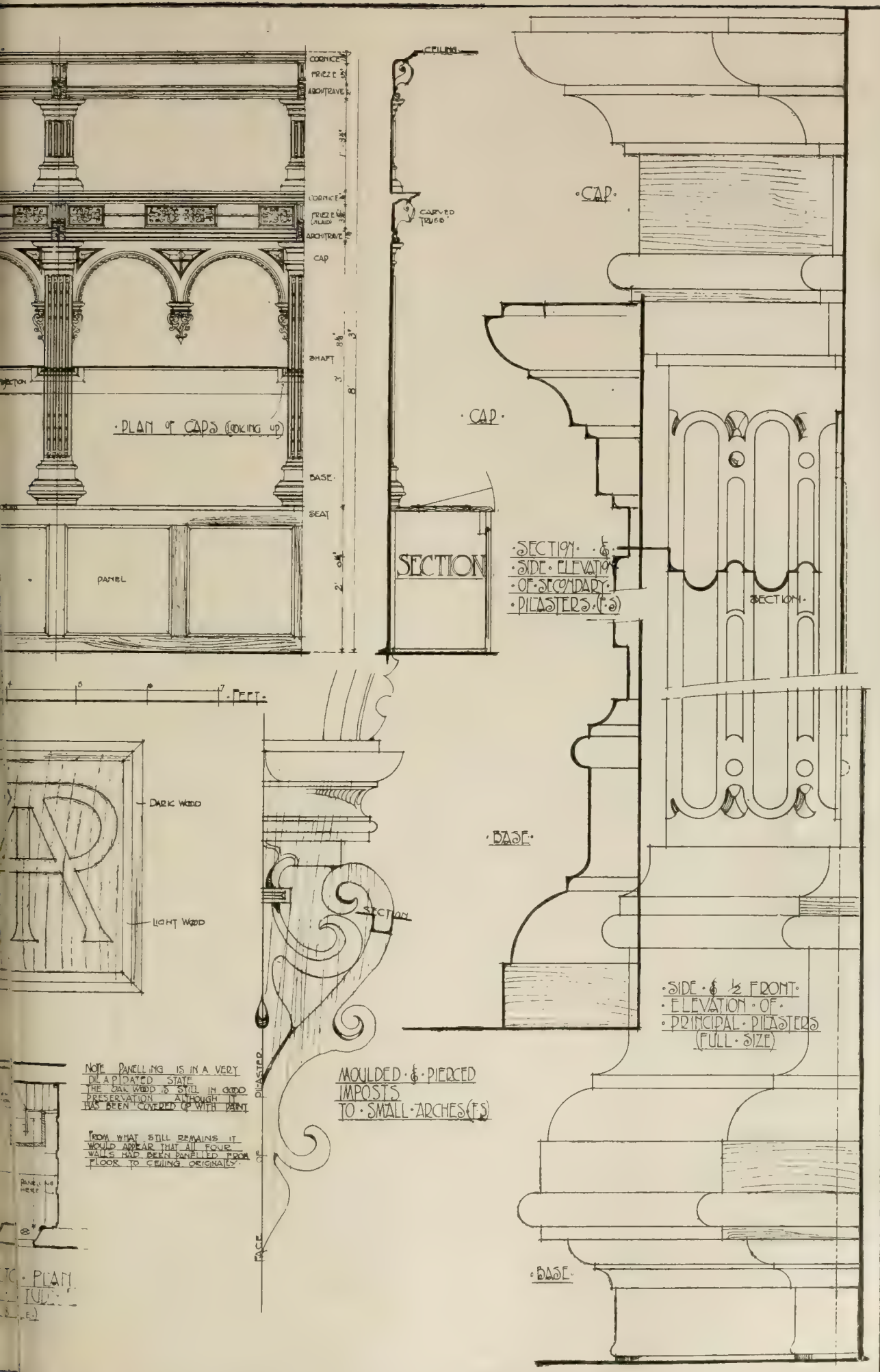
ARCHITRAVE
 TO SECONDARY
 PILASTERS

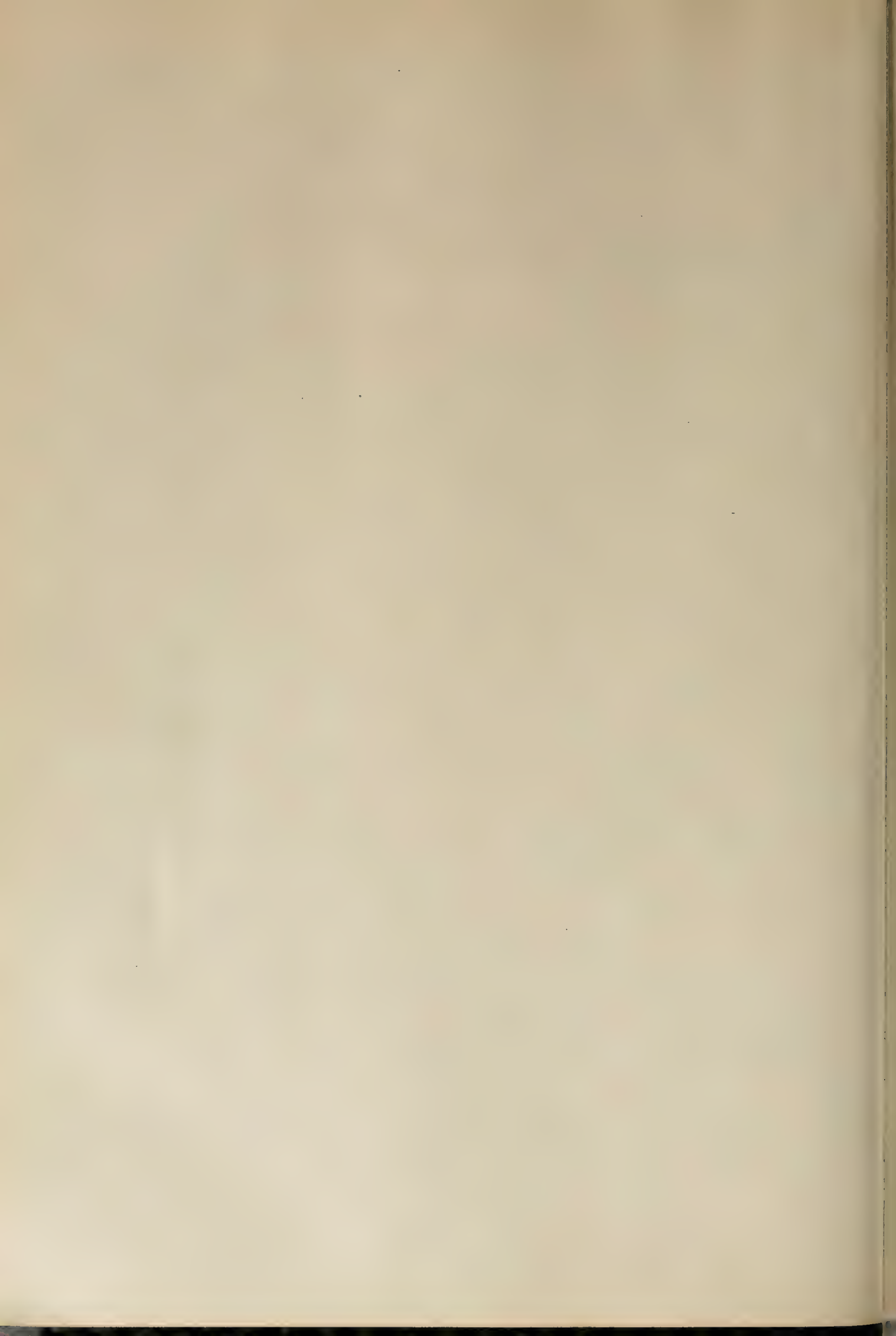
PLAN SHewing METHOD
 OF RETURNING PILASTERS
 ON WINDOW SCUTION

NOTE PANELLING OF WINDOW
 SCUTIONS HAS ALL BEEN
 REMOVED EXCEPT AT G
 ON SKETCH PLAN

DATE RETURNED

PROJECTION OF FIRST CORNICE





LEGAL INTELLIGENCE.

LONDON, BRIGHTON, AND SOUTH COAST RAILWAY v. METROPOLITAN WATER BOARD.—This special case was heard before a Judge of the King's Bench Division on May 15, 1914, when it was decided that the laying of water-mains through or under lands and property of a railway company, under the powers conferred on the Board by Section 61 of their Various Powers Act, 1907, did not involve the purchase or acquisition of any of such lands or property within the meaning of Section 96, Subsection 6, of that Act. The London, Brighton, and South Coast Railway Company appealed against this decision, and the appeal came on for hearing on the 3rd inst. After hearing counsel for the appellants, the Court of Appeal confirmed the decision of the lower Court without calling upon the Board's counsel to argue.

COLLAPSE OF A REINFORCED-CONCRETE BUILDING AT BURY.—The inquest on the nine workmen who lost their lives in the recent collapse of a building in course of erection at Bridge Hall Paper Mills, Bury, Lancs, was held in that town on Tuesday, Wednesday, and Thursday in last week, before Mr. S. F. Butcher, district coroner. Mr. Wingate Saul, of Manchester, appeared for Messrs. G. Greenwood and Sons, contractors, of Halifax; Dr. Eastham for Messrs. James Wrigley and Sons, Ltd., of the Bridge Hall Mills; and Mr. J. Mills for the relatives of William Robert Tattersall, John O'Neill, and John Crondon, three of the men who lost their lives. Mr. J. Owner, H.M. Inspector of Factories, was also present.—Fred Dunham, foreman for Messrs. Greenwood and Sons, deposed that he had had nine years' experience in reinforced concreting, and had carried out similar work to this on other occasions. He did not know the cause of the south-west column being 1½ in. out of plumb. He went on the roof on the morning of the accident to see if there were any cracks, or if there was anything wrong on the top.—Mr. Owner: Did you or any of your men plumb any of the columns on the west side? No.—The witness further stated, in reply to the coroner, that he worked to a specification, and the whole of the concrete-work was done where it was intended to stand. The roof-work was done from a temporary platform higher up than the top of the crane-beam. The timber was first put in position, and then the reinforcements were put in by Evans, Morris, and others, under the witness's supervision. They found some difficulty in ramming down the concrete, because there was so little room between the bars. Witness, questioned by Mr. Owner, said the taking away of the centring had nothing to do with the fall of the roof. It was suggested by Mr. Arnot on the Monday that the roof-supports should be taken out, and it was on that suggestion they were taken out on Tuesday morning. He did not explain to Mr. Arnot, when the suggestion was made, that the south-west column was out of plumb. Between February 6 and 15 he had discussed the south-west column being out of plumb with Mr. Hudson. He did not receive any instructions to make it good. The crack in the column seemed to get bigger. The column was that which had to take the weight of the long side of the roof.—By Dr. Eastham: On the Monday Mr. Arnot said it would be a good thing if the wall could be built up, but he did not order him to pull down any supports. Witness could not account for the building not being able to support its own weight.—Richard Roberts, a concreter, said that previous to February 16 he received instructions from Mr. Hudson about plastering a crack between the south-west column and the gable-end of the wall. He occasionally assisted in putting in reinforcement, and he found some difficulty in ramming the concrete in, owing to the closeness of the bars.—Mr. John Arnot, managing director of J. Wrigley and Sons, gave evidence with respect to instructions given to G. Greenwood and Sons for building a concrete machine-house. The work was begun in March, 1914. About August they determined to have a travelling-crane put inside the machine-house, and the plans were altered accordingly. For the past four years Messrs. Greenwood and Sons had been doing reinforced-concrete work for the firm, and all their work had been very satisfactory.—Mr. Saul: Did you not suggest on the Saturday that the gable-end should be built up because you knew that the column was out of plumb?—Witness: Exactly.—And obviously, like everybody else, you did not appreciate that there was any danger in removing the shoring, or you could never have suggested it? That is so.—Mr. Mills: Do you know whether plans were submitted to the local authority for approval?—He did not know.—Frederick Dunham, recalled on Thursday, stated that on February 13 a sheath-

ing was removed from the roof-trusses, and similar work was being done on the morning of the accident. He had made an examination of the roof-trusses, and found that there were some steel rods bare from concrete on both trusses. The steel bars on some of the other trusses were also uncovered.—Mr. Arnot, managing director of Messrs. Wrigley and Sons, Ltd., owners of the buildings, was also recalled. He said that the tunnel near the building was completed before the foundations of the machine-house were laid.—Evidence was then given by Reginald Arthur Hudson, of Halifax, the supervisor of the erection of the paper-mills. He had, he said, fourteen years' experience of architectural work and seven years' experience of concrete-building operations. It was his duty to supervise the work at Bridge Hall Mills for Messrs. Greenwood and Sons, and whilst the roof was being laid he visited the place every working day. No other member of the firm of Greenwood and Sons shared in the supervision of the work. Witness explained that the eaves-beams of the roof were, so far as lateral stress was concerned, divided into separate segments, and it was not expected that one segment would substantially reinforce the others. Each segment was expected to bear its own weight.—The Coroner ascertained from the witness that the plans of the building were not submitted to the local authority. Messrs. Wrigley and Sons had not supplied him with forms of submission to the local authority, and, since he was never asked to submit the plans, he allowed the matter to drop.—The Coroner: You knew the making of this roof was one of quite extraordinary difficulty?—Witness: Yes.—Under those circumstances, does it not become extremely important to the builder that the plans should have the approval of the local authority before he proceeds with them?—As a safeguard—yes. The witness added that personally he had been of opinion that the approval of the local authority should have been secured, but could not remember that he had expressed the opinion to his employers. The box sides of the concrete reinforcements, which should have been unsheathed according to the instructions of the designer, were not removed—owing, the witness stated, to the fact that the men could not find the time to carry out his orders.—The Coroner: Since you could not get the box-sides unsheathed without sweating your men, why did you not procure outside assistance to take them off? I cannot say why.—The Coroner: Was there any reason, apart from negligence, why you did not have these box-sides unsheathed? There was no reason why they were not unsheathed.—The witness afterwards admitted that a serious flaw in one of the roof-trusses had probably gone undiscovered because the sheathing of the box-sides had not been removed.—"It emphasises," remarked the Coroner, "the seriousness of not having the sheathing removed."—When asked to offer an opinion as to the cause of the collapse, the witness explained that in his opinion a roof-truss had not done the work that it was supposed to do. It had not been a dead-weight on the eaves-beam. He agreed with the coroner that the strain of the roof was too great for the strength of its supports, and the roof "broke its back" at the point at which the strain was excessive. The stress fell on the eaves-beams, and, being divided in separate segments, they were canted over.—Dr. Eastham elicited from the witness that Messrs. Wrigley and Sons, Ltd., had no responsibility for the engineering designs.—Hubert Murphy, of Tooting, London, said he was responsible for the engineering designs of the buildings which had collapsed to the Rigid Reinforcement and Concrete Company, Ltd. He was an engineer by trade, but was not qualified by diploma, and he had had no special training in reinforced-concrete work, although he had been engaged in it for periods during the past eight years. He admitted that when designing the roof which had collapsed he had not seen the end of his work from the beginning. He also acknowledged that he had made an error in his calculations of the roof-principals which resulted in the steel having a depth of only 1½ in. when he supposed it was 3½ in. deep. There was a point beyond which, if it were under tension, steel ceased to have any elastic recovery. This was called the elastic limit, and the result of his miscalculation had been to cast much greater tension upon the steel reinforcement of the roof than was within his knowledge until after the roof had collapsed. It was not until after the catastrophe that he discovered his fatal error in calculation. It had been caused by his neglecting to bring down a figure in the course of a division sum. The result of the sum should have been 24,640, whereas he had made it 2,464, forgetting the nought.—The Coroner: And you based your drawings on that result? Yes.—In reply to

further questions on the same point, the witness said he had no one to assist him in checking the figures, because he had not thought a check was necessary.—Mr. W. A. Thomas, an architect of Liverpool, with experience in the erection of concrete buildings, reported that he had examined the damaged buildings. The conclusion which he drew from his examination was that the work had not been properly carried out, and that, apart from bad work, the roof must inevitably have collapsed, since its general design was faulty. In some of the roof-principals the steel was out of place, and the concrete, which was of bad quality and could not be of the mixture described by the contractor, was ill-set and not such as would warrant the removal of props. The way in which the work had been executed was slovenly, and showed lack of experience.—At this stage the inquest was adjourned until to-day (Friday).

A YOUTHFUL PUBLIC WORKS CONTRACTOR.—Claude William Jukes, The Hollies, Burnt Tree, Tipton, public-works contractor, was publicly examined in bankruptcy at Dudley on Tuesday, before the Registrar, Mr. Young. The statement of affairs showed gross liabilities £769, and deficiency £768. Replying to the Official Receiver (Mr. Fairbairn), debtor (twenty-three years of age) stated he started business in January, 1913, in partnership with another, as public-works contractors, his capital being £125. They carried on business separately, at their own addresses—debtor as "Jukes and Co.," and his partner under his own name. The businesses were distinct, but there was an arrangement for the profits and losses to be pooled and divided. The partnership was dissolved in July, 1914, when an accountant prepared a statement of affairs showing debtor was liable to pay £211. This he had paid; but he was still liable in respect of unpaid partnership debts amounting to £116. He started business on his own account in April, 1914, his first contract being one of £442 for sewers at Lye, upon which he made about £40 profit. He had since been engaged on three contracts for making streets, kerbing, and channelling and sewerage for the Cannock District Council, the total contract prices amounting to over £3,700. These contracts were unfinished, and he was of opinion no benefit would accrue to the estate by completing them. He attributed his failure to loss on contracts caused by the war, unfavourable weather, rise in the price of materials, and meeting bad ground and water. The examination was closed.

An inquiry will be held at Brentford by the Local Government Board on April 8 into an application of the urban district council for sanction to a loan of £10,914 for widening and improving Ealing-road.

The formal opening took place on Friday at Dunfermline of a new infants' department in connection with M'Lean School, now one of the largest under the jurisdiction of the Dunfermline School Board. The new department consists of seven classrooms, each to accommodate fifty pupils, and the cost was upwards of £6,000. Mr. J. T. Scobie, master of works to the School Board, was the architect.

At Bow County-court, on Monday, application was made to Judge Smyly on behalf of the Postmaster-General for an award enabling him to place overhead telephone-wires in various streets branching off the high-road in Leyton. The application was opposed by the Leyton Urban District Council, who objected to the posts on the ground that the streets were congested, and they would be a source of nuisance and annoyance. His Honour reserved judgement.

Owing to the European War, and the consequent difficulty of obtaining accommodation of every kind, the Council of the Royal Archaeological Institute of Great Britain and Ireland much regret that it is impossible this year to hold a summer meeting. The annual general meeting for the transaction of ordinary business will be held this year in London, in the apartments of the Society of Antiquaries, Burlington House, Piccadilly, W., at 4.30 p.m. on Wednesday, June 30.

At the meeting on Tuesday of the city council of Exeter the streets committee reported having resolved that the tender of Fothergill Bros., Ltd., at the price of £3,269, be accepted for making up Haven-road and Water-lane. The rejection of the recommendation and acceptance of the lowest tender was moved. It was explained, on behalf of the committee, that Messrs. Fothergill were specialists in this particular work. The amendment was carried by a large majority, and the council then decided to accept the tender of Mr. W. R. Brealey, of St. Thomas, at £3,236.

Our Office Table.

The Central News learns that Mr. Handel Booth has completed his investigation, undertaken at the invitation of the Office of Works, into the nature of the contract for timber purchase between Mr. Montague Meyer and the War Office. Mr. Booth has addressed his report in the form of a letter to Lord Emmott, the First Commissioner of Works, and the contents of the communication will be made public in due course.

Yesterday (Thursday) witnessed the retirement of Sir Philip Magnus, M.P., from a service of thirty-five years' unremitting labour for the City and Guilds of London Institute. For eight years, from Lady Day, 1880, he held the post of organising director and secretary of the Guild, and has since been superintendent and secretary of the Institute's department of technology. Sir Philip, who is now in his 74th year, has had a great part in the growth and development of the movement for the establishment of technical education in England, and he was also one of the first to urge that manual work should form a place in the curriculum of elementary schools.

A discussion was recently raised by Mr. J. Landfear Lucas in the Press as to the exact height of St. Paul's Cathedral, and authorities have been quoted as giving the height, from the level of the cathedral floor to the top of the cross, in figures varying from 340ft. to 404ft., or even more. These doubts are now laid to rest by a statement by Canon Alexander, the Treasurer of St. Paul's, to the effect that very careful measurements have just been made by the cathedral staff, showing that the height from the floor to the cross is 355ft. 6in. It should be remembered that the level of the cathedral pavement is several feet above the surrounding ground, and this, again, several feet above the level of the crypt.

The Urban District Council of Colwyn Bay recently applied to the Local Government Board for sanction to borrow moneys for carrying out two public improvements in the sewerage of the portion of the urban district west of Bronynant and in the Mochdre Valley to Rhos, and the constructed new electricity works and destructor. Both schemes were considered urgent in the best interests of the urban district. The urban council have received a letter from the Board with respect to the sewerage scheme to the effect that, while (with certain minor amendments) the Board consider it a project for the carrying out of which they would be willing in ordinary times to grant borrowing powers, they think it should for the present be deferred. If the council are unable to secure a reconsideration of this decision by the Board, certain building estates in the area to be drained by the sewer will for the time being be held up, and the existing house property will, necessarily, continue to be drained into cesspools. The cost of the sewerage scheme will be about £11,000.

In the last Indian Public Works Department Administration Report, the Government, in their review, remark that now that a consulting architect has been appointed to the Province of the Punjab, architectural work will receive its proper share of attention, and that the Government will look for much-needed improvement in the style of all its buildings, both large and small. Our contemporary, "Indian Engineering," points out, however, that while the more important buildings will now receive proper attention as far as their architecture is concerned, it is a physical impossibility to expect one architect to see to the designs of all the buildings to be built in the province. "It would probably be as well to realise from the start that the much-needed improvement looked for cannot be expected until the local Government have at their disposal a properly equipped architect's office, consisting of a senior consulting architect and three or four fully qualified assistants, besides thoroughly trained architectural draughtsmen."

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Glasgow Architectural Craftsmen's Society. Business Meeting. 8 p.m.

SATURDAY (To-morrow).—Institution of Municipal and County Engineers. South Wales District Meeting at the City Hall, Cardiff. "Notes on Extraordinary Traffic on Highways," by D. M. Jenkins, Neath. 2.15 p.m.

Institution of Municipal and County Engineers. South-Western District Meeting at the Municipal Buildings, Taunton. Discussion on "Public Baths," to be opened by D. Edwards, Borough Surveyor of Taunton. 2.30 p.m.

MONDAY.—Victoria and Albert Museum. "Belgian Mediaeval Architecture," by Banister F. Fletcher, F.R.I.B.A. 4.30 p.m.

Royal Society of Arts. "House Building: Past and Present," Cantor Lecture No. 3, by M. H. Baillie Scott. 8 p.m.

Royal Institute of British Architects. "King's College Hospital," by W. A. Pite, F.R.I.B.A. 8 p.m.

TUESDAY.—Architectural Association. "The Changes in the Conception of Artificial Permanent Defences," by Hilaire Belloc. 18, Tufton-street, S.W. 8 p.m.

WEDNESDAY.—Royal Archaeological Institute. "Some Irish Religious Houses," by Ian C. Hannab, M.A. Burlington House, W. 4.30 p.m.

Trade News.

WAGES MOVEMENTS.

GLASGOW BRASSMOULDERS. — The Glasgow brassmoulders, who have been on strike for the past month for an advance of 2d. per hour, have decided to submit the question to the Government Arbitration Court, and resumed work on Wednesday.

TRADE NOTES.

Messrs. Heffer, Scott, and Co., Ltd., have opened new showrooms at 56, Berners-street, W., whence they have removed from No. 64 in the same thoroughfare.

Under the direction of Mr. Alfred J. Taylor, M.S.A., architect, 18, New Bond-street, Bath, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air-inlets, has been applied to the Medical Baths, Torquay.

Owing to the death of Mr. E. C. Homer, the partnership existing between him and Mr. C. W. Lucas has been dissolved. Mr. Lucas is continuing to practise on his own account, and on and after March 25 his address will be 56, Brook-street, Grosvenor-square, W. Telephone, Mayfair, 1321.

That many important architects are adopting a Pudlo-cement treatment when they require waterproof conditions is evidenced by the reports we constantly receive. The architects who have control over the work at the Hawke-moor Sanatorium have specified large quantities of Pudlo for the concrete and the topping on same.

Re Hastings Bros., Ltd.—Mr. Frank G. Wiseman, of Messrs. Matthews, Wiseman, and Co., public accountants and auditors, of 22 and 23, Queen Anne's-chambers, Tothill-street, Westminster, S.W., under date of March 18, 1915, writes us as follows:—"I beg to inform you that I have been appointed by the Court receiver and manager of the above-named company, and that I have taken possession of the assets. I shall be obliged if you will cancel all orders for advertisements in your publications as from the 12th inst. which may be standing in the name of the company."

Mr. T. Ingle, of Kelbrooke, Colne, has been appointed highway surveyor to the Louth Rural District Council in place of Mr. R. C. Bryan, resigned.

Mr. Thomas Kay, of Moorfield, Stockport, who died on September 22, left to the Rylands Library, Manchester, the Ludgate or Grafton picture of Shakespeare, "which, I believe, was saved from the sack of Grafton Regis by the troopers of the Commonwealth on Christmas Day, 1643," and to the corporation of Stockport his pictures hanging in Stockport Town Hall.

The medical officer of health's report to the Liverpool Corporation Housing Committee for 1914 was issued on Monday evening. It shows that the insanitary dwellings in the old city and the added areas at the opening of the year comprised 356 courts, 1,868 court houses, and 1,013 front houses. At the close of the year there remained 314 courts, 1,693 court houses, and 952 front houses.

FOR

Olivers'

Seasoned

Hardwoods,

TO—

WM. OLIVER & SONS, Ltd.,

120, Bunhill Row, London, E.C.

TENDERS.

* * Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ABERAVON.—For furnishing at the new municipal buildings, for the corporation. Accepted tenders:—

Contract A:—

Allinsons, Sheffield ... £856 16 9

Contract B:—

Cox, M., Port Talbot ... 218 0 0

ABERDEEN.—For construction of new road between Bannermill-road and Constitution-street, for the streets committee:—

Leith, J., Aberdeen (accepted) ... £596 7 7

ASHBY.—For the erection of a council school at Ashby, for the Lindsey County Council:—

Gilbert and Hall, Nottingham ... £5,520 0 0

(Accepted.)

ASHFORD, KENT.—For the supply and delivery of 50,000 gallons of oil, for the urban district council:—

Anglo-American Oil Co. (accepted) 3¹/₂ p.d. per gal.

AVONMOUTH.—For the extension of the timber platform new shed to Royal Edward Dock, for the Bristol Docks Committee:—

Perkins, J., and Sons, Bristol (accepted).

BURY, LANC.—For the extension of the sewerage systems, for the Radcliffe Urban District Council and the Bury Rural District Council. Mr. W. L. Rothwell, engineer:—

Bentley, I., and Co., 11, Horton

Grange-rd., Bradford (accepted) £4,673 0 0

BUSHEY.—For laying London-road, Bushey (between the Middlesex county boundary and the Watford urban district boundary), with creosoted deal paving (approximate area, 31,000 square yards), and a short length with granite set paving (approximate area, 3,000 square yards), for the Hertfordshire County Council. Mr. J. S. Killick, county surveyor:—

Griffiths, W., and Co., Bishops-

gate-street ... £34,999 10 1

Mowlem, J., and Co., West-

minster, S.W. ... 34,720 9 1

Improved Wood Paving Co.,

Queen Victoria-street, E.C. ... 34,047 8 2

Acme Flooring and Paving Co.,

Victoria Park, N.E. ... 33,681 5 4

Manders, M., and Co., Leyton

Green, Leyton (accepted) ... 30,830 6 0

CRAYFORD.—For laying a branch sewer from the sawmills to Northumberland Heath, for the rural district council:—

Southern, F. W., & Co., Leicester £1,996 16 1

(Recommended for acceptance.)

CUCKFIELD.—For installation of a steam pump at the West Hylands, for the guardians:—

Phillips, J. F., and Son, Brighton £105 10 0

(Accepted.)

EXETER.—For making up Haven-road and Wales lane, for the city council:—

Brealey, W. R., St. Thomas ... £3,236 0 0

(Accepted.)

GRAYS.—For alterations to the administrative block, for the joint hospital board:—

Horsman and Co. ... £1,590 0 0

Carter, H. J. ... 1,540 0 0

Brown Bros. ... 1,534 0 0

Walsham, W. E. ... 1,530 0 0

Marrabale, J. ... 1,490 0 0

Stark, F. C. ... 1,406 0 0

Brown, G. (accepted) ... 1,387 0 0

GRAYS.—For erection of a corrugated iron building to be used as a war hospital, for the Orsett Joint Hospital Board:—

Brown, G., Grays (accepted) ... £1,484 0 0

HADLEIGH, SUFFOLK.—For alterations and repairs to 49, Angel-street, Hadleigh, proposed to be used as a children's home, for the Guardians of Cosford Union:—

Downs & Stephenson, Hadleigh,

Suffolk (accepted) ... £122 0 0

HAMMERWICH.—For the Watling-street sewerage scheme at Hammerwich, for the Lichfield Rural District Council:—

Warrington, M., Hyde, Stockport £1,500 0 0

(Accepted.)

HELSTON.—For the restoration of the laundry, for the guardians:—

Richards and Trezise, Helston ... £124 10 0

(Accepted, exclusive of extras.)

HEREFORD.—For equipment of small holdings at Canon Bridge Farm, Madley, for the small holdings and allotments committee:—

Powell, W., and Sons ... £1,241 0 0

Peake, W. H. ... 1,100 0 0

Field, G., Birmingham ... 1,091 0 0

Cooke, C. ... 1,085 0 0

Preece, P. W. ... 1,007 10 0

Pugh, D. W., Allensmore ... 983 15 2

E. W. Wilks and Sons, West End

Works (accepted) ... 997 8 0

(County land agent's estimate, £997 14s.)

(Rest of Hereford.)

(Continued on page XLIII.)

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

	Per standard.	
Yellow Pine Deals, 1st quality...	£55 0 0 to £57 0 0	
" " 2nd " "	43 0 0 " 45 0 0	
White Deals: First " "	22 0 0 " 24 0 0	
" " Seconds " "	20 0 0 " 22 0 0	
U.S. Yellow Planks, Deals, and Battens	10 10 0 " 14 10 0	
Oak: Austrian Wainscot	£0 10 0 to £0 12 6	
Teak: Burmese, per load, 50ft.	28 0 0 " 34 0 0	
Teak: Java, per load, 50ft.	24 0 0 " 27 0 0	

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£8 10 0 to £8 13 6	
Wrought-Iron Girder Plates	8 15 0 " 10 0 0	
Steel Girder Plates	8 17 6 " 9 17 6	
Bar Iron, good Stuffs	6 5 0 " 8 10 0	
Do., Lowmoor, Flat, Round, or Square	22 0 0 " 0 0 0	
Do., Welsh	5 15 0 " 5 17 0	
Boiler Plates, Iron—		
South Staffs	8 0 0 " 8 15 0	
Best Sneathill	9 0 0 " 9 10 0	
Angles 10s., Tees 20s. per ton extra.		
Builders' Hoop Iron, for bonding, &c., £8 15s. to £9.		
Ditto galvanised, £14 to £15 10s. per ton.		
Galvanised Corrugated Sheet Iron—		
No. 18 to 20. No. 22 to 24		
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0 " £13 10 0	
Best ditto	13 10 0 " 14 0 0	
Cast-Iron Columns	£6 17 6 to £8 10 0	
Cast-Iron Stanchions	6 17 6 " 8 10 0	
Rolled-Iron Fencing Wire	8 5 0 " 8 10 0	
Rolled-Steel Fencing Wire	7 5 0 " 7 10 0	
Galvanised	8 15 0 " 9 5 0	
Cast-Iron Sash Weights	5 15 0 " 6 0 0	
Cut Floor Brads	10 15 0 " —	
Corrugated Iron, 24 gauge	16 0 0 " —	
Galvanised Wire Strand, 7 ply.	14 5 0 " —	
14 B.W.G.	14 5 0 " —	
B.B. Drawn Telegraph Wire, Galvanised—		
0 to 8 " 10 " 11 " 13 " B.W.G.		
£10 10s. £10 15s. £11 0s. £11 5s. £11 15s. per ton.		
Cast-Iron Socket Pipes—		
3in. diameter	£6 15 0 to £7 2 6	
4in. to 6in.	6 10 0 " 6 12 6	
7in. to 24in. (all sizes)	6 17 6 " 7 2 6	
[Coated with composition, 5s. Od. per ton extra.		
turned and bored joints 5s. per ton extra.]		
Pig Iron—	Per ton.	
Cold Blast, Lillieshall	80s. Od. to 127s. 6d.	
Hot Blast, ditto	87s. Od. " 97s. Od.	
Wrought-Iron Tubes and Fittings—Discount off		
Standard Lists f.o.b. (plus 2½ per cent.)—		
Gas-Tubes	72½ p.c.	
Water-Tubes	66½ " "	
Steam-Tubes	65 " "	
Galvanised Gas-Tubes	60 " "	
Galvanised Water-Tubes	56½ " "	
Galvanised Steam-Tubes	50 " "	

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	£28 10 0 to —	
" " Country	29 10 0 " —	
Lead Barrel Pipe, Town	29 10 0 " —	
" " Country	30 10 0 " —	
Lead Pipe, Tinned inside, Town	30 10 0 " —	
" " Country	31 10 0 " —	
Lead Pipe, Tinned inside and outside	33 0 0 " —	
" " Town	34 0 0 " —	
" " Country	31 10 0 " —	
Composition Gas-Pipe, Town	31 10 0 " —	
" " Country	32 10 0 " —	
Lead Soil-pipe (upto 4½in.) Town	31 10 0 " —	
" " Country	32 10 0 " —	
" " [Over 4½in. £1 per ton extra.]		
Lead, Common Brands	17 17 6 " £18 12 6	
Lead Shot, in 28lb. bags	24 15 0 " —	
Copper Sheets, sheathing & rods	86 0 0 " 86 10 0	
Copper, British Cake and Ingot	71 10 0 " 72 10 0	
Tin, English Ingots	186 0 0 " 190 0 0	
Do., Bars	187 0 0 " 191 0 0	
Pig Lead, in 1cwt. Pigs (Town)	19 2 6 " 20 2 6	
Sheet Lead, Town	28 0 0 " —	
" " Country	29 0 0 " —	
Genuine White Lead	34 0 0 " —	
Refined Red Lead	32 0 0 " —	
Sheet Zinc	73 0 0 " —	
Old Lead, against account	23 10 0 " —	
Tin	10 0 0 " —	
Cut nails (per cwt. basis, ordinary brand)	0 13 3 " —	
* For 5 cwt. lots and upwards.		

SLATES.

	in. in. £ s. d. per 1,000 of	
Blue Portmadoc	20 x 10 " 12 13 6	1,200 at r. stn.
" " "	16 " 8 " 6 12 6	" "
Blue Bangor	20 " 10 " 13 2 6	" "
" " "	20 " 12 " 13 17 6	" "
First quality	20 " 10 " 13 0 0	" "
" " "	20 " 12 " 13 15 0	" "
" " "	16 " 8 " 7 5 0	" "
Eureka unfading green	20 " 10 " 15 17 6	" "
" " "	20 " 12 " 18 7 6	" "
" " "	18 " 10 " 13 5 0	" "
" " "	16 " 8 " 10 5 0	" "
Permanent Green	20 " 10 " 11 12 6	" "
" " "	18 " 10 " 9 13 6	" "
" " "	16 " 8 " 6 13 6	" "

BRICKS.

(All prices net.)

First Hard Stocks	£1 15 0	per 1,000	alongside, in
Second Hard Stocks	1 11 0	"	" (river.
Mild Stocks	1 9 0	"	" delivered
Picked Stocks for		"	at rly. stn.
Facings	2 5 0	"	"
Flettons	1 14 0	"	"
Pressed Wire Cuts	1 18 0	"	"
Red Wire Cuts	1 14 0	"	"
Best Fareham Red	3 12 0	"	"
Best Red Pressed		"	"
Ruabon Facing	5 0 0	"	"
Best Blue Pressed		"	"
Staffordshire	3 15 0	"	"
Ditto Bullnose	4 0 0	"	"
Best Stourbridge		"	"
Firebricks	4 0 0	"	"
2½in. Best Red Ac-		"	"
crinton Plastic	4 10 6	"	"
Facing Bricks		"	"
3½" Accrington Best Red Plastic Facing	per 1,000		
Bricks	£2 10 0		
3½" ditto Second Best Plastic ditto	2 2 6		
Ditto Ordinary Secondary Bricks	1 11 3		
Ditto Plastic Engineering Bricks	1 17 6		
Sewer Arch Brick not more than 3½ in			
thickest part	2 0 0		
3½" Chimney Bricks fit for outside work	2 6 0		
3½" ditto ditto through and through	2 0 0		
3½" Beaded, Ovolo and Bevel Jambes; Octagons; 2½ and 3" radius Bullnoses; Stock patterns	3 7 6		
Accrington Air Bricks, 9" x 2 course deep, each	0 0 6		
Ditto 9" x 1 course	0 0 3		
Accrington Camber Arches—			
3 course deep, 4½" soffit, per foot opening	0 1 3		
4 ditto 4½" ditto ditto ditto	0 1 8		
5 ditto 4½" ditto ditto ditto	0 2 1		
6 ditto 4½" ditto ditto ditto	0 2 6		
3 ditto 9" ditto ditto ditto	0 2 1		
4 ditto 9" ditto ditto ditto	0 2 11		
5 ditto 9" ditto ditto ditto	0 3 6		
6 ditto 9" ditto ditto ditto	0 4 6		
Net free on rail, or free on boat at works.			

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

	White, Ivory, and	Best.	Buff, Cream, Other	Second
	Salt Glazed.	Best.	Second.	Colours.
Stretchers—				
£12 7 6 £10 17 6 £13 17 6 £17 17 6 £12 7 6				
Headers—				
11 17 6 10 7 6 13 7 6 17 7 6 11 17 6				
Quoins, Bullnose, and 4½in. Flats—				
15 17 6 14 17 6 17 17 6 21 7 6 15 17 6				
Double Stretchers—				
17 17 6 16 7 6 20 17 6 24 7 6 17 17 6				
Double Headers—				
14 17 6 13 7 6 17 17 6 21 7 6 14 17 6				
One side and two ends, square—				
18 17 6 17 17 6 21 17 6 26 7 6 18 17 6				
Two sides and one end, square—				
19 17 6 18 7 6 22 17 6 26 17 6 19 17 6				
Splays and Squints—				
17 7 6 15 7 6 21 17 6 24 7 6 17 7 6				
Plinth and Hollow Bricks, Stretchers and Headers—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Double Bullnose, Round Ends, Bullnose Stops—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Rounded Internal Angles—				
4d. each 3d. each 5d. each 5d. each 4d. each				

MOULDED BRICKS.

Stretchers and Headers—				
8d. each 8d. each 8d. each 8d. each 8d. each				
Internal and External Angles—				
1/2 each 1/2 each 1/3 each 1/3 each 1/2 each				
Sill Bullnose, Stretchers, and Headers—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Majolica or Soft Glazed Stretchers and Headers	£23 17 6			
Quoins and Bullnose	27 17 6			
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours	Not exceed- ing 9in. by 4½in. by 2½in.			
Camber arch bricks, any kind or colour, 1s. 3d. each				
Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.				
* These prices are carriage paid in full truck loads to London Stations.	s. d.			
Thames Sand	7 6	per yard, delivered		
Pit Sand	7 0	" "		
Thames Ballast	6 0	" "		
Best Portland Cement	36 0	to 41 0 delivered		
Ground Blue Lias Lime	21 0	per ton delivered		
Exclusive of charge for sacks.				
Grey Stone Lime	s. d. s. d. per yard,			
Stourbridge Fireclay in sacks 27s. Od. per ton at railway station.	13 6 to 14 0	delivered		

STONE.*

Red Mansfield, in blocks	per foot cube	£0 2 4
Darley Dale, ditto	" "	0 2 3
Red Corshill, ditto	" "	0 2 2
Closeburn Red Freestone, ditto	" "	0 2 0
Ancaster, ditto	" "	0 1 10
Greenshill, ditto	" "	0 1 10
Beer, ditto	" "	0 1 6
Chilmark, ditto (in truck at Nine Elms)	" "	0 1 10½
Hard York, ditto	" "	0 2 0
Do. do. 6in. sawn both sides, landings, random sizes	per foot sup.	0 2 8
Do. do. 3in. slab sawn two sides, random sizes	" "	0 1 3

* All F.O.B. London.

Bath Stone, delivered on road	£ s. d.	
waggons, Paddington Depot	per foot cube	0 1 7½
Ditto, ditto, Nine Elms Depot	" "	0 1 9½
Beer Stone, delivered on rail	" "	" "
at Seaton Station	" "	0 1 1
Ditto, delivered at Nine Elms	" "	" "
Station	" "	0 1 7½
Portland Stone, in random blocks of 20ft. average—		
Delivered on road waggons	Brown White	
at Paddington Depot,	Whit Bed. Base Bed.	
Nine Elms Depot, or	Per foot cube.	
Pimlico Wharf	£0 2 3 " £0 2 4½	

TILES.

	s. d.	Delvd. at
Plain red roofing tiles	42 0	per 1000 ry. sn.
Hip and Valley tiles	3 7	per doz.
Broseley tiles	50 0	per 1000
Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz.
Ruabon red, brown, or brindled		
ditto (Edwards)	57 6	per 1000
Ornamental ditto	60 0	" "
Hip tiles	4 0	per doz.
Valley tiles	3 0	" "
Selected " Perfecta " roofing tiles: Plain tiles (Peake's)	46 0	per 1000
Ornamental ditto	48 6	" "
Hip tiles	3 10½	per doz.
Valley tiles	3 4½	" "
" Rosemary " brand plain tiles	48 0	per 1000
Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz.
Valley tiles	3 8	" "
Staffordshire (Hanley) Reds or brindled tiles	42 6	per 1000
Hand-made sand-faced	45 0	" "
Hip tiles	4 0	per doz.
Valley tiles	3 6	" "
Hartshill " brand plain tiles, sand-faced	45 0	per 1000
Pressed	42 6	" "
Ornamental ditto	47 6	" "
Hip tiles	4 0	per doz.
Valley tiles	3 6	" "

OILS.

Rapeseed, English pale, per tun	£28 15 0 to £29 5 0
Ditto, brown	26 15 0 " 27 5 0
Cottonseed, refined	29 0 0 " 30 0 0
Olive, Spanish	39 10 0 " 40 0 0
Seal, pale	21 0 0 " 21 10 0
Cocoonut, Cochin	46 0 0 " 46 10 0
Ditto, Ceylon	42 10 0 " 43 0 0
Ditto, Mauritius	42 10 0 " 43 0 0
Palm, Lagos	32 5 0 " 33 5 0
Ditto, Nut Kernel	35 0 0 " 35 10 0
Oleine	17 5 0 " 19 5 0
Sperm	30 0 0 " 31 0 0
Lubricating, U.S.	0 7 0 " 0 8 0
Petroleum, refined	0 0 6½ " 0 0 6
Tar, Stockholm	1 6 0 " 1 10 0
Ditto, Archangel	0 19 6 " 1 0 0
Linseed Oil	0 3 3 " —
Baltic Oil	0 3 7 " —
Turpentine	0 3 1 " —
Putty (Genuine Linseed Oil)	per cwt. 0 10 0 " —
Pure Linseed Oil	" " 0 9 0 " —
"Stority" Brand	" " 0 9 0 " —

GLASS (IN CRATES).

English Sheet Glass: 15oz.	21oz.	26oz.	32oz.
Fourths	5½d.	6d.	6½d.
Thirds	6d.	6½d.	7d.
Fluted Sheet	5½d.	6d.	—
Hartley's English Rolled Plate	3½d.	3½d.	4½d.
White.			
Tinted.			

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 6
Fine Elastic Carriage	0 12 9
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Fine French Oil	1 1 0
Eggshell Flattening Varnish	0 18 9
White Copal Enamel	1 4 9
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 6

Mr. D. R. McIlreavey has been appointed town surveyor by the Portstewart Town Commissioners.

Mr. David Moir, Parkend, Arbroath, has been appointed road surveyor to the St. Cyrus District Committee of the Kincardineshire County Council.

The late Mrs. Mary Sale, of Wick Episcopi, Holt, Worcester, has left her water colour drawings by Turner, David Cox, and Copley Fielding to the British Museum.

A new church has been built at Ammanford at a cost of £7,000. The architect was Mr. W. D. Jenkins, of Llandilo, and Mr. William Evans, of Ammanford, was the contractor.

Mr. M. D. Campbell, gas manager to the Fraserburgh Town Council, has been voted by the council an honorarium of £50 for services in connection with the extension of the plant.

LIST OF COMPETITIONS OPEN.

Mar. 30—Water-Supply Scheme, Chew Magna	£100, £50	J. S. Dury, Clerk to Clutton R.D.C., Temple Cloud, Bristol.
April 21—Laying Out Coach-road and the Erection of Houses, Whitehaven	30gs., 20gs., 10gs.	T. Brown, Town Clerk, Town Hall, Whitehaven.
No date—Municipal Buildings, Stepney (Mr. Henry T. Hare, F.R.I.B.A., Assessor)		G. W. Clare, Town Clerk, 15, Great Alie-st. Whitechapel, E.
do. —Small Hospital, Gale mire		E. B. Croaswell, Clerk, Union Hall, Whitehaven.
do. —Designs for Cottages, Bromborough Estate. Architects in Practice only. Cost not more than £1,000 per group of Five, and £1,400 per group of seven. (Mr. Geoffrey Lucas, F.R.I.B.A., Assessor)		Nine premiums of 2½ p.c. per group Lever Brothers, Ltd., Port Sunlight, Cheshire.

LIST OF TENDERS OPEN.

BUILDINGS.

Mar. 26—Free Library, Repairs to, Stroud	Committee	F. Winterbotham, Hon. Sec., 5, Rowcroft, Stroud.
26—Branch Stores, Eastwood Vale, Rotherham	Masbro' Equit. Pioneers' Soc., L.I.	J. Platts, Archt., High-street, Rotherham.
26—Shop and Three Houses, High-street, Rawmarsh		J. Platts, Archt., High-street, Rotherham.
27—School, Evanstown, Gilfach Goch	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cardiff.
27—School, Hendreforgan, near Gilfach Goch	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cardiff.
27—Intermediate School, Cottage at, Porth	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cardiff.
27—Public Elementary School (194 places), Thundersley	Essex Education Committee	G. Topham Forrest, County Archt., 79, Duke-st., Chelmsford.
27—School, Additions to, Osmore Valley, Fronwen	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cardiff.
27—Intermediate School, Alterations to, Porth	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cardiff.
27—Three Cottages, Surfleet	Spalding Rural District Council	Davis and Crowley, Archts., 6, Double-street, Spalding.
27—Masters' House, Alterations to, Brynna	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cardiff.
27—School, Playsheds at, Pantywaun, near Panteg	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cardiff.
27—Glenlatterach Farm Steading, Alterations to, Elgin	Glamorgan County Council	A. Cameron, Factor, Seafield Estates Office, Elgin.
27—Domestic Science Building, Caerphilly	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cardiff.
27—School, Improvements to Playground at, Rudry	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cardiff.
27—School, Alterations to, Craigeefnare	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cardiff.
29—Grammar School, Extension of, Bridlington	Town Council	J. Bilson, Archt., 23, Parliament-street, Hull.
29—Sub-station, Walton-street, Dundee	Corporation	H. Richardson, M.I.E.E., Electricity Department, Dundee.
29—No. 3, Clarendon Buildings, Repairs to, Shrewsbury	H.M. Works Commissioners	A. W. Ward, A.M.I.C.E., Boro' Eng., The Square, Shrewsbury.
29—Western District Sorting Office, Edinburgh		H.M. Office of Works, 3, Parliament-square, Edinburgh.
29—Houses (61), Capal, Llanelly		The Borough Surveyor's Office, Town Hall, Llanelly.
29—Fire Hose Station and Public Lavatories, Caerau	Maesteg Urban District Council	S. J. Harpur, Archt., 32, Commercial-street, Maesteg.
29—Cinema, Hirwain		J. C. Rees, M.S.A., Parade Chambers, Neath.
29—Banking Premises, Ivybridge		W. F. Tolitt, Archt., Totnes.
29—Eight Artisans' Dwellings, Rishworth		R. Horsfall and Son, Archts., 22A, Commercial-st., Halifax.
30—Garage and Bay Window to House, Huddersfield	Borough Council	A. A. Hinchcliffe, A.R.I.B.A., Archt., 14, Regent-st., Barnsley.
30—Removing Floor over Bath, Shepherd's Bush	Dr. Ryce	H. Mair, Boro' Sur., Hammersmith.
30—Residence and Surgery, Pentrebach, Merthyr Tydfil	Corporation	Johnson and Richards, Archts., Merthyr Tydfil.
30—Sanatorium Buildings, Grassington	Guardians	The City Architect, Town Hall, Bradford.
31—Two Cottages, Repairs to, Bristol	Lanchester Joint Hospital Board	J. J. Simpson, Clerk, St. Peter's Hospital, Bristol.
31—Admin. Block, Additions to, Sanatorium, Maiden Law		G. T. Wilson, Archt., 23, Durham-road, Blackhill.
31—Four Houses, Swallow-lane, Golcar		A. Shaw, Archt., Golcar.
31—Steam Laundry, Greenback, Falmouth	R. W. Lingham	C. W. Parke, Lees, Archt., Porthpean, Lanteglos-by-Fowey.
31—Council School (250 places), Penryn	Carmarthenshire County Council	W. V. Morgan, A.R.I.B.A., County Architect, Carmarthen.
31—Boiler House, Isolation Hospital, Bargoed	Bedwellty Urban District Council	D. H. Price, Sur., Aberbargoed.
31—Training College, Cookery Room at, Dublin	Corporation	J. F. Fuller, Archt., 179, Great Brunswick-street, Dublin.
31—Bathroom at Registrar's House, Barrow-in-Furness	Rural District Council	The Borough Engineer's Office, Town Hall, Barrow-in-Furness.
31—Labourers' Cottages (13), Claremorris	Beath (Fife) School Board	J. W. Judke, Clerk, Claremorris.
31—School, Barclay-street, Cowdenbeath	W. Waite	G. C. Campbell, Archt., Methil.
April 1—Shed and Store Shed, Bridgefield Depot, Huddersfield	Corporation	F. B. Ward, M.S.A., 8, South Brink, Wisbech.
1—Police Cottage, High Wyth, Sawbridgeworth	Herfordshire County Council	K. F. Campbell, M.I.C.E., Boro' Eng., 1, Peel-st., Huddersfield.
1—Sanatorium, Extensions to, Little Heath, Belvedere	Erith Urban District Council	J. S. Killick, County Sur., Hatfield.
1—Ten Working-Class Dwellings, Reedham	Blofield Rural District Council	H. Hind, Sur., Council Offices, Erith.
7—Council School, Landfyrddog	Anglesey Education Committee	H. H. Cole, Clerk, 12, Bank-street, Norwich.
7—Council School, Ty Mawr	Anglesey Education Committee	J. Owen, F.R.I.B.A., County Archt., Menai Bridge.
7—Council School, Additions to, Penrhaeth	Anglesey Education Committee	J. Owen, F.R.I.B.A., County Archt., Menai Bridge.
7—Council School, Additions to, Llanfachreth	Anglesey Education Committee	J. Owen, F.R.I.B.A., County Archt., Menai Bridge.
7—Council School, Additions to, Llanfachreth, Holyhead	Anglesey Education Committee	J. Owen, F.R.I.B.A., County Archt., Menai Bridge.
7—Council School, Additions to, Llechylched, Bryngwran	Anglesey Education Committee	J. Owen, F.R.I.B.A., County Archt., Menai Bridge.
8—Municipal Buildings, Repairs to, Truro	Town Council	F. A. Barnes, A.M.I.C.E., City Eng., Man. Buildings, Truro.
9—Laundry Block, Great Barr Park, West Bromwich	Joint Committee	G. McMichael, A.R.I.B.A., 105, Colmore-row, Birmingham.
9—Two Houses & Shop Front, Alterations to, Angarrack		J. Harris, Angarrack.
10—Council School, Egloskerry	Cornwall Education Committee	B. C. Andrew, Archt., Biddick-court, St. Austell.
12—Dungannon House, Additions to, Dungannon	Tyrone County Council	J. Hunter, B.A., Lisburn.
12—Baptist Well Council School, Swansea	Education Committee	A. W. Hadden, Clerk, Education Dept., Grove-place, Swansea.
29—Sanatorium & Children's Home, Southfield, Mearns	Glasgow Corporation	J. Lindsay, Town Clerk, Glasgow.
No date—White Horse, Rebuilding, South Bersted, Bognor		Messrs. Whitehead, Archts., 18, South-street, Chichester.
do. —Plough & Harrow Inn, Rebuilding, Bettws, Ammanford	E. Evans Bevan	C. J. Rees, M.S.A., Parade Chambers, Neath.
do. —St. Clement's Church, Fulham Palace-road, Fulham		T. Skinner, 6, Silvertown-road, Hammersmith, W.
do. —Three-storied Building, Kendal	W. Shepherd and Sons	M. G. Shaw, L.R.I.B.A., 45, Highgate, Kendal.
do. —Memorial Hall, Salisbury		John Harding and Son, Archts., 58, High-street, Salisbury.
do. —Farmhouse and Outbuildings, Snettisham		L. F. Eagleston, Archt., King-street, King's Lynn.

ELECTRICAL PLANT.

Mar. 26—Turbine, Leighton-road, Hove	Corporation	C. B. Smith, M.I.E.E., Electricity Works, Hove.
26—Accumulators, Leighton-road, Hove	Corporation	C. B. Smith, M.I.E.E., Electricity Works, Hove.
31—Installation at Derrington-rd. School, Lower Tooting	London County Council	The Chief Engineer, County Hall, Spring Gardens, S.W.
April 6—Supply Extensions, Aberdare	Urban District Council	D. L. Griffiths, Clerk, Town Hall, Aberdare.
8—Steam Alternator (400-kw.), Bridgend	Urban District Council	W. Welbury, Eng. and Man., Elec. Works, Bridgend.
9—Telegraph Cable connecting Cadiz & Teneriffe, Spain		Registro General de Telegrafos, Calle de Carretas, Madrid.
26—Electric Lighting Material for Shops at Jolimont		The Victorian Rly. Commissioners, Spencer-st., Melbourne.
26—Central Exchange and Telephone System, Salonica	Greek Ministry of Com.	The Ministère des Communications, Direction des Postes.
26—Central Exchange, Athens	Greek Ministry of Com.	The Ministère des Communications, Direction des Postes.
26—Telephone Apparatus, Athens	Greek Ministry of Com.	The Ministère des Communications, Direction des Postes.
May 4—Plant, Aldershot	Urban District Council	F. Garside, Electricity Works, Laburnum-road, Aldershot.

ENGINEERING.

Mar. 26—Waterworks, Carmarthen	Rural District Council	J. Saer, Clerk, 7, Hall-street, Carmarthen.
27—Heating Chambers at School, Newtown	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cardiff.
30—Steam Road Roller, Ware	Urban District Council	G. H. Gistby, Clerk, Town Hall, Ware.
30—Ferro-Concrete Water Tower, Selsey	Water Co.	J. O. Holt and Sons, 4, West Gate, Chichester.
30—Centrifugal Pump, Dundee	Corporation Electricity Dept.	The Department, Dudhope Crescent-road, Dundee.
31—Waterworks, Barrnill, Ayrshire	District Com. of N. Ayrshire	Warren and Stuart, Civil Engineers, 94, Hope-street, Glasgow.
31—Concrete Toe at Harbour, Kirkcaldy	Town Council	R. Henderson, Harbour Eng., Saint Andrew sq., Edinburgh.
31—Pumping Machinery, Cairo		The Inspector-General of Prisons, Prisons Department, Cairo.
April 2—Waterworks, North Marsh	Axbridge Rural District Council	A. Powell, M.I.C.E., 10, Orchard-street, Bristol.
7—Colliery Connections, Chesterfield	Mansfield Railway Co.	R. Elliott-Cooper, Eng., 15, Deans Yard, Westminster, S.W.
7—Artificers' Works (Two Years), Blackdown and Deepcut	War Department	The Director of Army Cons., Imperial House, Tothill-st., S.W.
7—Artificers' Works (Two Years), Bordon	War Department	The Director of Army Cons., Imperial House, Tothill-st., S.W.
7—Artificers' Works (Two Years), Woking	War Department	The Director of Army Cons., Imperial House, Tothill-st., S.W.
9—Tar Extractor, Harrogate	Gas Co.	F. H. Robinson, A.M.I.C.E., Eng., Gasworks, Harrogate.
12—Boilers, Westbank, Portobello	Corporation	The Engineer, Dewar-place, Edinburgh.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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OUR ILLUSTRATIONS.

English Norman Doorways. Photographed by Mr. Charles E. Keyser, M.A., F.S.A.

The National Birthplace Memorial to President McKinley at Niles, Ohio, U.S.A.: Selected Design, elevation and plan, with sketch view. Messrs. McKim, Mead, and White, Architects.
Rutherford College for Girls, Newcastle-on-Tyne. Selected Design for the Assembly Hall. View and plan. Messrs. Marshall and Tweedy, Architects.
BUILDING NEWS Designing Club: A Co-operative Hostel for a Garden Suburb. Three chosen designs by "September Morn," "Bournemouth Queen," and "Walbroke."
The Cameron Hotel, Swansea, and the Carlton Cinema and Restaurant, Swansea. Views and plans. Mr. Charles T. Ruthen, Architect.

THE SPECULATIVE BUILDER.

Although the term "speculative builder" is used as an opprobrious epithet in general talk, that is neither the fair nor the full meaning of this word in its original signification. For speculation really stands for foresight, and for that outlook which judges of what will happen in the future. In all commerce and finance this far-seeing instinct, or intuition, is the gift of those who make fortunes in the money markets, or trading centres, of the world. So, though the phrase "speculative builder" has become a commonplace with those who do not like to see other landowners cutting up the countryside, and who prefer the neighbourhood of suburban fields to that of roads of small houses, there is another sense, in which it has a higher and better meaning. This is the sense in which building, as a speculation, affects landowners, financiers, architects, surveyors, solicitors, workmen, and the building trades generally. Someone must begin building upon vacant land, if it is to be made profitably productive in any other than an agricultural or a market-gardening way. Who will do it? Our municipalities have made various attempts—some of them successful, but many at much financial loss and frequent muddling. Nor can they do more than provide housing for the poor, or the workers. So the whole question of erecting dwellings for the great middle class of the community is left to the operation of the law of supply and demand, in much the same way as is done with regard to all the other commodities and conveniences of our daily life.

Every man his own landowner and erecting his own house, is a beautiful ideal, but one whose realisation is practically impossible. There have been many cases of estates cut up into suitable plots for building purposes, which were sold on the land itself, after a good auctioneer's luncheon in a tent, and bought at fair prices. But what became of this property as a whole, and what is the outlook for these localities? Perhaps one of the worst examples that can be quoted of the working out of this method is a certain popular resort. Here was a pretty and most accessible seaside place, inviting and awaiting the development which it never got. Instead of this, there was a jumble of odd houses put up by individual owners of plots of land, with many other plots between lying grass-grown and derelict. If one large landowner had himself laid out the estate, as at Eastbourne, for instance, there would have been a handsome and flourishing watering-place in this sheltered little bay. So there would, had the whole land been laid out on one proper plan, and then let on building leases, or sold as freehold, to

a capable speculative builder. While there are many who talk of the ruin of some country place by the inroads of what they call the "jerry builder," there are few to admit the good work he has done, or to notice the common occurrence of odd plots of ground lying idle, or of made roads grass grown and leading nowhere, which show the failure of landowners who did not understand how to build.

In the working out of the economic law of supply and demand, which is the traffic of passing commodities from the producer to the consumer, the middleman always has been, and, probably, always will be, found to be an essential agent. He is, of course, condemned when anything goes wrong, and both producer and consumer agree only in thinking that he, at all events, should make no profit out of a transaction by which both benefit. Yet he remains and flourishes, and if admitted to be an evil, he must be put down as a necessary evil. So where a landowner wishes to make money out of his land, and wants to get at those who are willing to buy or rent new houses, he has to see how this can best be done in the business of building. Then there steps in the speculative builder as the middleman, and, in many cases, as the very pivot upon which the profit of the transaction must turn. It is true that the owner of ground fit for building can, if he likes, employ an architect and surveyor, and enter into a contract with a good builder to erect the houses he desires. This plan has often been tried; but, in many cases, it has failed to work well. For the contract price is generally too high, even without inevitable extras, to leave a sufficient margin of profit on the houses when completed and sold; if, indeed, they sell at all at the figure needed. Nor does the landowner, as a rule, want to take the risk of having to sell or let the houses on his land. So he looks round for the builder who will "cover" the ground and "create" ground-rents as may be agreed, and who will also take the risk of ultimate loss off his hands. This is a sheer speculation, for no one can tell how the houses will "go," and thus the builder who accepts the job is rightly called speculative.

The owner who thinks his land is fit for development, and having found a builder of some character and capacity on whom he can rely, will, if he is wise, consult him as to whether the ground is really "ripe" for building. Indeed, no builder of any good will undertake the work unless he is of that opinion. A man of this class, who has successfully put up whole streets of new shops or dwellings in other localities, is practically the best, if not the only, judge of the ripeness of the land for this

development. He has somehow or other an instinct, or a "nose," as is said, in these matters, based partly upon experience, but more often upon a queer kind of intuition. He goes over the ground in his own rough-and-ready way, looks round the locality, considers its surroundings—the market, the railway, and other facilities, even the scenery—and so makes his shot at the chance of success. If he is right in his foresight, or speculation, the houses sell quickly when, or before, they are finished, and he comes out with a good profit. But if the gamble goes wrong, and he cannot sell soon and readily, then the loss is upon him, and generally upon him alone; so that, again, he is most rightly called speculative.

For the landowner, if he is properly advised, should make no loss, whatever happens. Nor need he run any real risk at all. As owner of the freehold land, he will make a contract with the builder, commonly called a building agreement, under which he allows the builder to erect certain houses, according to plan, and of a stated value, upon his ground. He further agrees that when the houses are quite completed, he will grant the builder leases of the same for terms and at ground-rents then fixed. If roads have to be made, these are first done by the owner, who also finances the builder during the work, either with his own money, or someone else's, to whom a mortgage on the land is given. Then the builder begins to work under his agreement, which provides for cash advances being made to him by the owner as the job proceeds, and usually upon the addition to each floor, always upon the certificate of the owner's surveyor. In this way, while the builder, who is commonly a man of small, if any, capital, gets enough to live and pay wages and buy materials with which to carry on, the owner always has the security of the houses or shops in course of erection, and which, being on his land, become and remain his property until the leases are granted at the end. The owner, indeed, always takes care, on the advice of his surveyor, to keep the advances below the value of the buildings in course of erection. But he does even better than this in the way of a security for his floating loan, because all the materials supplied to the builder securing the job become his property as soon as they are brought upon the land. Thus there is little fear of loss, even if the builder fails to complete his contract, as may happen, and meanwhile the owner gets a high rate of interest upon his money—usually six or more per cent.—while the builder has to do his best with the traders in the way of obtaining his materials at fair prices, and yet on credit.

When the houses are certified by the surveyor to the owner as finished, he then grants the builder his leases, or separate conveyances of the same, as may have been provided in the agreement. Throughout all this business the builder pays the law costs charged by the owner's solicitor, which are usually upon a generous scale along the whole line, and which come to a good round sum from beginning to end. Thus the builder, after he has completed the houses, and has paid up everything due in the way of advances, interest, and costs, gets the houses, and may sell them as best he can. The owner, in the case of leases, of course has his ground-rents, which, in fact, the builder has, by his work and expenditure on the land, really created. Most land-owners of this class sell these ground-rents at once, and so get out of the transaction with a very good profit, and, in prosperous times, they can do the same financing elsewhere all over again upon another piece of ground, which they often buy cheap for that purpose. It may be that the builder has to mortgage some, or all, of the houses before he can repay the advances, and, indeed, this rather frequently occurs. But the owner does not grant the leases, or execute the separate conveyances, if the houses are to be kept freehold, until he has had all his money. Thus, as we said at the beginning, the landowner need run no risk whatever in the matter, and can and does leave all the speculation to the builder who has put up the property.

In London and its suburbs the leasing system is generally adopted for financial reasons. The land, if used to create ground-rents, at once brings in money by their sale. If this is not done, then this money remains in the land, and can be regarded as capital which is sunk there out of sight. When the builder has got his leases and his mortgages, he has placed upon himself the burden of the ground-rents, and the yearly interest payable. Without some money or income to back him, he must usually sell the houses as soon as possible, for, even if he lets them at fair rents, there is usually not much margin for him, after he has met the various outgoings, even before any repairs become necessary. So he sets about selling the property; and in good times builders have often sold soon and well, and so made good profits. If, however, the houses do not go readily, then the speculation has failed. For, even if he lets the houses quickly, there is trouble and expense beyond the ground-rent and the interest, while repairs soon begin to trouble. There may also be creditors pressing for payment of their accounts for materials supplied, who could be met easily if sales were effected, but not otherwise. Thus the builder has the houses on his back, and he, alone, has to fight his way out, hoping in the end to justify himself in regard to the view he took of the prospects of the property when he first entered into the speculation.

There is, however, nothing speculative about the landowner's share in the transaction. He gets back all the money he has advanced with good interest, and with no costs or expenses to himself. Mortgagees who lend to the builder on the houses have their security, which it is for them to see is sufficient; they do not speculate in the matter. But the builder, who has paid fees and costs to surveyors and solicitors all along the line, has got to get his money back again out of the houses themselves, and which are now entirely on his hands. The method often adopted nowadays by the builder, especially in some localities, is to refuse to let his houses on any terms. He will only sell, and this plan of a sale has several advantages, for it quite

mystifies the intending buyer, who might know something of the rental value, if he were only renting the house, but can make nothing of the price asked, having no knowledge on which to calculate. The builder who knows his business also arranges with a Building Society to make an advance well up, or near, to the selling value, and then he can offer a house to a young and anxious buyer for a small sum in cash down, the rest to be met by a mortgage which will, in time, be cleared off by monthly instalments paid to the society. Whether in this way or any other, the builder who can thus sell his houses gets out also, as have the others before him who, as landowner, mortgagee, surveyor, solicitor, or trader, have, for cash considerations, assisted the builder in his little speculation.

But the speculative builder, having usually no other business, nor much skill in any trade, must go on building in order to gain a decent livelihood. This is one of the various causes that, in prosperous periods, brings about that over-building from which he, and those engaged with him, subsequently have to suffer. Thus it is that after the fat years come the lean, and upon excessive activity there follows reaction and stagnation. Of recent years, all this has worked disastrously for the builder and the building trades. Since the war began, building has naturally slackened down; nor is it likely to be brisk again for some time after the Peace. The rise in wages and in the price of materials is pretty certain to be maintained, so that the way of the builder will be harder than ever, as houses must cost more. But there is plenty of vacant land only awaiting development when it is wanted. There will also then be a strong tendency to invest the vast sums of money lying idle in home securities rather than in foreign loans. It is true that the war cost is, and must be, enormous; but there is not likely to be any want of savings available for land and building, because the national income is so great and growing even nowadays. So we may look for a revival of building operations soon after the war is really over, and we shall find that the law of supply and demand will again work out, although on new lines, to the profit of landowners, professional men, and traders, when there is again full and fair scope for the initiative, the enterprise, and the energy of the speculative builder.

ROYAL SOCIETY OF PAINTERS IN WATER COLOURS.

The 164th exhibition of the Royal Society of Painters in Water Colours is well up to the average. It would be unfair, perhaps, to say that the dead outshine the living contributors; but certainly the exhibits by the late Walter Crane and H. S. Hopwood lend very great interest to this year's show, tinged inevitably by regret that they are probably the last that will be seen. Walter Crane's works embrace five subjects—"A Kitchen Garden" (52), "Walland Marsh—May" (64), "Study in a Water Garden" (67), "Apple Orchard" (78), and "Carrara" (83), all marked by the high quality and instantly arresting interest characteristic of the contributions of their author. Mr. Hopwood's pictures are hung nearly all together on one of the end walls, and comprise "The Daughter of the House" (150), "A Sunny Morning" (157), "Street Scene in Tunis" (160), "The Spinner" (161), "The Letter Writer" (162), "In Picardy" (163), "Sheep Market" (164), "Market-place, Tunis" (165), "The Carpet Seller" (166), "The Linen Room" (167), and "A Nun" (173). No regular contributor will be more missed than Mr. Hopwood.

Mr. Alfred Parsons, R.A., fully justifies

his precedence with "The Ouse at Milton Ernest" (26), "Azaleas and Magnolia" (120), a very excellent flower-piece, and another, "A Mixed Border" (126). Mrs. Allingham has four exhibits, "A Wiltshire Cottage" (2), the smallest, but not the least charming; "At Wroughton, Wilts" (87), "In Wiltshire" (185), and "A Pergola of Roses" (194). Mr. C. Napier Hemy, R.A., sends three, "Pretty Sailing" (4), "On the Rocks—Low Water" (11), and "The Western Land—Falmouth Bay" (60), each in his best manner, and faithful and attractive reminiscences of the Western coast. Of Mr. Albert Goodwin's works, perhaps "The Citadel, Cairo" (5) will please all best, but the other four will repay examination, especially "London from the Tower Bridge" (102). Of Mr. W. Eyre Walker's five subjects, we find most we like in "The Old Lock—An Autumn Morning" (98). Miss E. Fortescue-Bricklade will not lack admirers of her three successful appeals to good judgment as well as the emotions. Perhaps "Truth and Fiction" (8) is the most direct. Mr. Cuthbert Rigby's five landscape scenes are all good; "Gilbert Scar, near Ambleside" (14), perhaps the most striking. Mr. Reginald Barrett's architectural subjects are all excellently rendered; perhaps the "Central Doorway, St. Mark's, Venice" (14), the best so, but in only less degree "The Abbey, Middleburg" (24), "The Hospital, Venice" (133), "Venetian Palaces" (141), and "Sunrise, Venice" (175).

Mr. John Sargent, R.A., is conspicuous with "Boats on the Lake of Garda" (17), and "In Tyrol" (92). Both are vivid, and grip the beholder at once, even if the latter is left rather wondering how the lack of the picturesque in the latter has somehow been made to contribute to its attraction. Mr. T. M. Rooke is another welcome portrayer of architecture with his "Tunis Gate, Kaïouan" (20), "Milburn Gate, Durham" (37), "Durham from Gilesgate" (96), and an exceedingly good reproduction of "Rahero's Tomb, St. Bartholomew's, Smithfield" (168). Mr. W. Matthew Hale gives us a fine rendering of "The Gate of Justice, Alhambra" (41), and of "Venice—A Misty Evening" (200). Possibly the picture which will appeal most directly to the feelings is "The Lord Be Thankit" (74), by Mr. Henry Henshall. No grace was ever offered with more touching sincerity than that of the aged dame, whose grey hairs and gnarled hands bear witness to the strong probability that many a sparer meal has been the only stay of years of toil. In another vein, but as well appreciated, will be his "Golden Youth" (132).

Mr. J. H. Lorimer, R.S.A., sends a dainty flower-piece, "Snowdrops near Water" (85), and a stirring fray, "St. George for Merrie England!" (177). Sir Ernest A. Waterlow, R.A., is represented by no less than seven contributions. We like best, perhaps, "The Woods in Winter" (123), and "The Sussex Weald" (203). Mr. Robert Anning Bell's "The Echo" (59) suggests possibility that the listeners may hear little good of themselves, but cannot fail to attract notice. Mr. Robert Little, R.S.W., sends seven subjects; "Sicilian Sunlight" (99) we think is the best. Mr. Robert W. Allan, R.S.W., is equally well represented as regards numbers, "Into the West" (100), and "The Brass Market, Bruges" (129), appealing to us most successfully. "The Sisters Rocks at Tintagel" (184) is the best, we think, of the six sent by Mr. Arthur Hopkins. "Love in Anger" (198), by Mr. Charles Sims, is exquisitely fanciful. His "Rose" (19) is, in our judgment, better than his "Basket of Flowers" (201).

Among others we have only space to

name are contributions by Mrs. Laura Knight, her best, perhaps, being "The Magpie" (29); Mr. Harry Watson's "Evening Light" (114), and his "Tale of Romance" (143); Mr. D. Y. Cameron's "Perthshire Hills" (103); Mr. H. Hughes-Stanton, A.R.A., of whose four contributions we should select "Road Across the Moors" (71); Mr. James Paterson, R.S.A., with a bright view of "The Coolins from Orbst, Isle of Skye" (155); Mr. S. Curnow Vosper's "Le Drap Mortuaire" (43), and Mr. Arthur Rackham, whose "Bigbury Bay, South Devon (116), we like greatly.

We were glad to see a fair number of the pictures marked "sold" on the opening day, and advise all who can spare the money to add quickly to the number.

"BUILDING NEWS" DESIGNING CLUB. A CO-OPERATIVE HOSTEL FOR A GARDEN SUBURB.

This timely and taking subject holds the field by furnishing a capital chance for the display of intuitive skill on the part of any young architect without unduly taxing exceptional abilities, and we are rather pleased with the result of this competition, in which "September Morn" ranks first, "Bournemouth Queen" wins the second place (and in doing so almost "runs neck and neck" with the first man), while "Walbroke" obtains the third position, "Jove" coming well in fourth, but "Why" is disappointing for once; he usually holds his own. Evidently he is more *au fait* with buildings of a different class, and domestic work requires its appropriate kind of handling. He has the fifth place on this occasion.

The author of the premier design for the proposed hostel is decidedly improving. We note the excellence of his draughtsmanship, also the capital manner in which his drawings are set out on the sheet of paper. "Bournemouth Queen" likewise deserves a word of encouragement, for he illustrates his work to advantage; indeed his proposal externally perhaps evinces a clearer recognition as to the type of design better adapted to the precise purpose in view than appears to be realised in the sort of farm-house style illustrated by "September Morn." On the other hand it seems that "Bournemouth Queen" has overdone his bungalow idea by the particular way in which he worked it out, and there remains something to say, too, about his scheme in detail later on. We therefore adhere to the order of precedence already stated and will presently justify these conclusions. In the conduct of public competitions assessors seldom do this, and, if well advised, refrain from giving reasons for their awards. It must be agreed that occasionally umpires do manage to arrive at inexplicable results, while invariably reckoning by way of excuse that unsuccessful competitors will grumble. If protests are lodged the reply forthcoming commonly resolves itself into the assertion that no judge's verdict is likely to please all parties concerned. Reasonable dissatisfaction, no doubt, is difficult to forestall or to qualify, particularly when the cause of it is beyond recall. In the narrower field of competitions among students, such as our Designing Club, it is incumbent upon the assessor to furnish his reasons, and precisely the more clearly that is done the risk of encouraging fault-finding among disappointed candidates comes more into play. When all is said and done toward individuals who feel aggrieved will take their own view. Nevertheless, to be of any practical advantage to those employed in these contests a report must particularise the shortcomings of the schemes sent in, and clearly mention faults in unhesitating terms. The value of the entire enterprise is enhanced by informed and impartial criticism, but it is essential that the competitors should endeavour to accept the positions in which they find themselves compared with others who have worked out the same problems in various parts of the country. From the published designs all

can get suggestions for buildings of various types, and competitors obtain an excellent idea of their personal positions in the fray by learning their own individual measure. Some who fail to win that degree of prominence which they anticipated are probably taught really more than the high-flyers, and possibly others may also learn to what extent they have mistaken their vocation. Be this as it may, one and all will do well to keep in mind the obvious fact that men who are best succeeding now at one time ranked much lower in the lists. Everybody who can do work worth the doing knows that sustained effort alone can hold the goal.

The conditions for this subject were as follows:—

"A Co-operative Hostel for a Garden Suburb, consisting of eight separate lodgings for single gentlemen, planned as separate flats, with a common refectory 20ft. long by 14ft. wide, situate in the centre of the long frontage, and provided with a 6ft. wide verandah in front as a smoking lounge in the summer, and partly screened by glazed frames for springtime and autumn. On each flank end of this refectory place four lodgings or flats, two on ground floor and two on first floor, the common entrance door to each set of four to be at their respective end of the building, which will run N. and S., the frontage facing W., with garden ground to the E. The extreme length of the block or building to be not more than 100ft., the depth, being comparatively small, is not exactly restricted, and the site is open and level. Each flat or lodging to have a sitting-room 14ft. by 12ft. 6in., or of that area, exclusive of bays, and a bedroom about 12ft. 6in. by 10ft. Also a small food store with small external window for ventilation, and a small boxroom for boots, etc. One bathroom to serve for two flats, and one w.c. for the four tenants. One commodious staircase to each of the two sets of four dwellings, to give access to the pair on the first floor in each case. One garden door at back to each set of four flats. A 4ft. wide passage, leading to staircase and to common dining-room, is to divide the flats, two sets of which will face west and two sets east. This passage is not to run through the building from end to end. The kitchen is to be within the main lines of the building, and to face east at back of refectory, into which it is to lead, and to have a hatch also for service. Provide en suite a scullery, larder, dry store, coal-place, back w.c. (all in small enclosed yard); also a private staircase to lead to housekeeper's rooms in centre of upper floor. These comprise a sitting-room, two bedrooms, bathroom, and w.c. Also a store or linen-room. Housekeeper will undertake cooking, servants, general administration, and service. Refectory or dining-room to be 10ft. 6in. high; other rooms 9ft. high from floor to ceiling. Ground floor 1ft. above land level outside. Front elevation 6ft. to incl. One end elevation, and sufficient to show east elevation, also one section may be to 8ft. to incl. Plans may be to 16ft. to incl. if space is limited on sheet. A view sketch from S.W. corner is desired. Compact and commodious planning essential, and simple architectural treatment suitable for brick and tiles."

"September Morn" does well by recognising the verandah as the frontispiece of his façade, and he justifies his big gable by making it come down to the verge of his tile-hanging, to serve as a roof for this shelter belonging to the chief apartment in the hostel. That the middle rooms upstairs belong to the housekeeper is a matter of no moment in so far as the emphasis of this gable is concerned. We say this here because later on adverse remarks will occur in regard to central gables introduced by other competitors. His chief fault is a most serious one, though in some respects it is so small. We refer to the tenants' w.c. in both wings, because they are placed so very near the front doors and in full view of the stairs without a screen or ventilating lobby. In days of illness this arrangement would be inconvenient to a degree, and for the first-floor occupiers the situation must become

particularly intolerable. It may be an open question as to whether the sitting-rooms in such a building should open into the bedrooms or not. In the second man's plan they join, but each room has a separate door in the plan placed first. Two doors in so small a bedroom must seriously interfere with the available space for the bed. We are inclined to favour the arrangement of the parlour leading into the inner room, but the best way is to have a good lobby to each little flat shut off the main passage, and out of that little vestibule enter both rooms. The servant can then pass in to make the bed or whatnot without disturbing the tenant's peace in his sitting-room. One or two of the plans have adopted this sort of lobby. "September Morn" puts the fireplace in the common dining-room between the two doors, at the ends of the passages, thus risking a tendency to cause smoke to puff out into the room, and a probable draught is likely to interfere with the comfort of an after-dinner chat in front of the fire. In a refectory of this sort social ways should be encouraged, though the practice of boarding-houses is for the guests to vacate feeding-rooms very shortly after meals are over. In a hostel it is different, and this apartment is expected to serve as a common room between whiles. It is a gain to have the staircase close by the chief entrance, so that first-floor tenants need not necessarily traverse the ground-floor passages every time they come in or go out. The enclosure to the verandah might have extended itself to the limit set by the width of the gable span. The larder windows would have come within this space, but already the backs of the wall benches come in contact with the same enclosures. Even a small quantity of food wants housing properly. The projection of the bay-window helps to give a dwarfed appearance to the verandah for lounging about in. For the sake of light the ceiling over this annex should have corresponded in height with that of the dining-room, which is 18in. taller than the hostel rooms generally. The housekeeper's stair rises out of the kitchen behind the dresser, so smells of cooking would permeate her flat. The yard is very well arranged, and the effect is pretty as seen from the gardens, which go along the east side of hostel. Much space seems needlessly lost in the roof. The perspective view shows the middle gable ridge running closer on to the central chimney stack than the front elevation warrants because the brickwork is there shown coming through the main roof at one and the same position and following in a line with the same course of tiles.

"Bournemouth Queen" recognises, as we have said, the modern spirit, and favours the bungalow type, giving emphasis to horizontal lines which is an essential characteristic of old-English cottage work and yeomen's houses. He also aims at economy of construction by minimising the amount of brickwork. At first sight his large-scale elevation creates an impression that the face of the verandah is identical with that of the eaves cornice to the building, and it is not at once evident at a glance how much the segmental bays project as they actually do. The mansard roof treatment, with its strong oversailing dominance seems naturally to suggest an actual covering in a self-contained way throughout, including bay-windows and verandah. As it happens the curved bays quarrel with the salient essentials of the roofing idea by competing needlessly instead of accepting a more subordinate position. Had the cross-section been taken through the middle of these windows their awkwardness would have been apparent. The author avoids the discrepancy by not even suggesting an outline of their projecting extremity. It would have been more consistent to have made these bays flatter, corbelling them out at the window-board level. At present they strike discord in the contour of the plan, giving a restlessness to the lay-out. Generally, the tenants' rooms are fairly comfortable, and the w.c.'s are better placed than in the previous plan. The dining-room has recessed seats, which might do all right, though more in

harmony with a billiard-room. The fireplace comes where most architects would have put a big window. The verandah front is set out in a sensible way. The privacy of the bathrooms is rather too handy for practical jokes, and all the light and air obtainable for these lower bathrooms must be had from the smoking-lounge in the verandah. The yard is not so well arranged as in the first design. Many dormers so closely packed as here shown must seriously interfere with the building of the roof. The truss next the apex of the hip would have to rest on the trimmer over one of the bigger dormers, if a needed truss came in at all at such a casual point. The bathrooms are positioned rather well, but the landing in the housekeeper's flat is dark and over-large. The roof-lights on the back slope would be awkward, coming exactly where the main rafters or principals must come.

"Walbroke," who is allocated the third position, fails to give the housekeeper a bathroom as specified. She could very well have managed without the luxury of a big balcony. The gables add too great importance to her quarters, besides adding considerably to the cost of the building contract. Such an extensive roof would make an enormous place for the pigeons to multiply in, with their way in and out shown in the twin gables. There is no means of access for their supervision. A specially good point in "Walbroke's" plan is the lobby, giving an approach in each tenement to the bedroom without necessarily traversing the parlour. The doors on the small-scale plan look cumbersome perhaps, but the boot-place would not be constantly in use. A borrowed light is needed. We fancy the posts in the "Refectory" would be an encumbrance and might be omitted. The bathroom windows seem a trifle large. The verandah front is nicely managed, and the same may be said of the end porches, with the windows pleasingly placed on either hand. It is not quite clear what becomes of the glazed fillings of the verandah enclosure when they are not needed. Possibly they are intended to be hung folding to each bay. "Walbroke" has made distinct advances upon former efforts, and this progress should be followed up with further energy. Without enthusiasm little is ever accomplished.

"Jove" takes the fourth position with a Georgian sort of design, having a pediment in the centre of the frontage rather ponderous for a garden-suburb site; but the scheme is workable and avoids some of the mistakes mentioned already in the previous plans. The dining-room has a foursquare look with a fireplace projecting into the passage-way between the two doors. No one seems to have realised the gain obtainable by recessing this fireplace, and "Jove" has forgotten how badly the cook would stand in her own light when attending to the kitchen. The big service hatch is too near the right-hand doorway. The verandah is quite the type of thing most appropriate to a building of this style, but it is not easy to see how the open-work pilasters can be glazed to exclude draughts, and the fixed seats at the ends do not come well with no backs against the side-glazed screens. The bathrooms and w.c.'s are well arranged, but by giving an additional w.c. on the first floor the difficulty associated with the prescribed provision of one only for the four sets of rooms is obviated. One closet for four individuals is really sufficient. The staircase halls in this plan are needlessly big, and being repeated on two floors, add much to the cubic contents of the building, with corresponding cost. The out-buildings are not so well allocated as in the first plan, though both arrangements in general lay-out are identical. The larder is best associated with the scullery, and the outside w.c. comes better next the coal-place. The boot-room opens out of the bedrooms, and the bed is well-placed. The housekeeper's sitting-room might have been set in front instead of overlooking the out-buildings in the yard. That is, perhaps, a mere detail, but an insuperable difficulty in the way of making this change would arise from the awkward and ugly

squat-shaped windows being placed so high up in the front wall, precluding any outlook. This muddle is due to the need of space for the roof to the verandah, so that, anyhow, these bedrooms would be very uncomfortable. The housekeeper's quarters are all on one level. "Jove" makes his passages too dark, and the lower halls are almost devoid of light. The good points discoverable in "Jove's" work induce us to expect further designs from his hand.

"Why" is painstaking, and his personal labour over the draughtsmanship is remarkable, with the result that so much working-up of the elevations renders them almost inexplicable. The fussed-up shading prevents any understanding as to what is precisely intended. A space on the sheet was left for the perspective, the sub-title for same already figures just above, but, seemingly at the last moment, "Why" sketched in a very rough longitudinal section, so indifferently drawn as to be of no value whatever, except that it fills up the place on the paper meant for the picture. "Why's" drawings create the impression that he tries to be much too clever by half, and he cuts up his scheme so needlessly. The middle part of the east elevation is, however, quite pretty. In so far as the positions of the tenants' w.c.'s go, they are nice enough, but the author has overlooked the fact that their windows open into the enclosed verandah where the guests are to smoke. Obviously, much objection would be taken to this arrangement. A similar difficulty exists upstairs, owing to the undue prominence given to the windows of the w.c.s opening on to the already-mentioned balcony provided for the use of the domestics. Single gentlemen need their private places to be located beyond intrusion, and w.c.'s are much to be preferred when well isolated. "Why," like many another competitor, forgets what a bother the plumber would make with his ventilating-pipes and air-shafts among all these manifold gables and roof dodges with set-offs, concerning which, by the way, we are by no means sure. It is quite clear that the housekeeper's bathroom and w.c. could only be reached by going through her best bedroom. Had these conveniences been situated in the other projecting back wing, this objection might have been obviated. "Why" fiddles his time away over detailing curtains set behind window-bars, instead of thinking out practical points like this. He is not definite enough about staircases, and forgets to count treads and risers. The best bedroom over the kitchen might be at any level, so far as the plans are concerned, and the floor cannot be very far up owing to the set-out of the stair-steps, and there are many of them beyond this half-space landing shown leading up to the first floor. The dining-room ceiling is 18in. higher than the hostel rooms (as specified), but this kitchen, so far as we can tell, may be very much lower still. The first-floor sitting-rooms in the gentlemen's private suites (in the back part of the apartments) round about the fireplaces would be very dark, owing to the oriel windows being projected so far off from the main space of these parlour rooms.

"Sabrina" follows with a similar sort of Late Classic scheme, having a colonnaded verandah recessed under the first-floor apartments for the housekeeper, who is given no sitting-room. This, however, is a verbal mistake, possibly, as three rooms, the required number, are provided. The worst feature in this plan is the mixing-up of the bathroom and w.c., with the entrance-doors north and south of the hostel. The garden-doors on the east side, as specified, would really make by far the best way into the building, and the end doors might, by preference, be omitted. That would be contrary to the conditions. "Sabrina" is careless, as he calls the boot-cupboard in the four sets of W. rooms the "food-store," where there could be no external ventilation. In the E. rooms the outside little places are designated "food-stores"; but in all the flats the boot-store opens out of the sitting-room, which ought not to be. The kitchen store has neither light nor ventilation, and the house-

keeper's stairs are the same. There is no perspective. The exterior is pleasing enough, and would work out well; but it looks too much like a small hospital.

"Penwith" sends a very thin-looking pair of plans. The exterior is pleasing in design, though the verandah seems draughty and too much like a glorified porch. The entrances face west, and the w.c. is close to the garden-doors, which face the front ones. The bathrooms have closet-seats in them, so perhaps that next the garden-door is to be associated with the gardens. The kitchen range is in a dark corner. Each "flat" in this hostel has a little entrance-hall of its own. No perspective is given, and so the scheme suffers in this competition. The fenestration scheme is pretty, but the bedroom windows seem small.

"Houghton Lea" overdoes his elevations, which are schemed on the Queen Anne style of J. J. Stevenson or Mr. Basil Champneys with shaped-brick gables and broad-brick pilasters. These features make the best parts of this design. It has a kitchen without any window; but as there is a little yard, we presume the author blacked in the external wall of the kitchen by mistake. The verandah is ugly, and not fitted with glazed screens. The plans are crude, and the stairway head-room under the end pents is none too ample. No perspective is furnished, though we expressed a desire to have one.

"Tom Tit" has spent a deal of time in making a view of his, and we praise him for his industry. The perspective is correct-looking, but has too much detail put into it for artistic effect. Painstaking in a beginner is an excellent quality, and we refrain from any disparagement on that account. The verandah in this design is recessed. The sets of rooms have no food-places, as specified, and boot-places en suite are omitted. There is a common larder for every two flats, set next the w.c. on the ground plan, and box-rooms are provided next the staircase halls. The "refectory" has angle-set fireplaces. The style chosen is fitted for brick, and gives the air of a convalescent home.

"Pinto" recesses his chimney-corner in his dining-room, and some would call this an angle. The planning of this scheme is not strong in its comprehension of detail, and without the glass in the front doors the passages would be devoid of light. The projecting bay out of the big common-room impinges upon the sitting-out space in the verandah. Upstairs this bay is continued for effect's sake, and has a hipped roof over it, but the bisection on the first-floor plan has a very awkward appearance.

"North Point" devotes much space on his sheet to titles instead of providing the desired perspective, and in lieu of drawing the west elevation to the scale of 6ft. to the inch, the front figures to a much smaller, but unmarked, scale. The plans are not devoid of merit by any means, though the housekeeper's quarters depend upon a roof-light for the landing and staircase, and one bedroom has no fireplace, as might have been managed, seeing that the second angle-set grate in the dining-room comes immediately below, and must have a flue, for which a chimney is seen above the ridge outside. The elevations are not improved by the recessed gable over the middle part to the west.

"Black Cat" cuts up his design needlessly, and makes his housekeeper's quarters intrude into the wings of the hostel. The east-side parlours overlook the back quarters, and are oddly-shaped, with the bedrooms set beyond in an awkward way. The verandah front is far from pleasing or convenient-looking.

"Tonneler" overdoes his carefully-delineated study, over the big elevation of which the utmost precision is shown, the sashes being drawn in pale ink. The staircases have separate halls on the west side of the main entrance in each wing, and the bathroom adjoins towards the east close by the garden-door, where the w.c. is placed. The bedrooms are isolated from the parlours by the box-place and food-larders. Externally, the design is too ambitious and over-featured. There is no way out of the verandah, unless the dwarf walls are vaulted or climbed over. The view shows glazed

fillings, so egress that way is evidently not intended.

"Sea Wolf," without being pretentious, shirks simplicity of contrivance by setting out one set of rooms at right angles with the other set. He puts the w.c. at the end of the top-floor passage over the main entrances, so through ventilation and an end light becomes impossible. The housekeeper's sitting-room is the same size as the hostel refectory. When once her quarters are reached, she has by far the finest flat in the building. The roofing is much too complicated, and the perspective gives it a groggy appearance, as if the angles were serpentine and uncertain in relation to the chimneys.

"Nil Desperandum" treats us to a bird's-eye view. He puts the gentlemen occupiers in his hostel to the necessity of going out of the garden-door to reach their water-closets. This arrangement isolates sanitation, certainly, but it would not be popular nor convenient, and there is no alternative to this Spartan provision of an outhouse. The housekeeper is more fortunate, all in the warm upstairs over the scullery. The verandah is recessed, and is so walled-in that when the chairs are used no one can get a look out without standing up, save by way of the middle arch in the series of five.

"Ogee" give a Poor Law look to his hostel, and sends in a very institutional type of plan, but wasteful in passage-space. The top sets of rooms have no bathroom, as specified, but a w.c. for each pair is provided, with a large square landing in front of it, so as to make this convenience as conspicuous as possible, with an "area" adjoining intervening between the w.c. and the food-store. The servants' sitting-room is so large that it covers the boarders' big "refectory" and their verandah as well. No provision is made for differences of level, save one step line, where the side-doors lead to the wings on first floor. The entrances to the hostel have porticoes pedimented.

"Pergradus" uses stucco, half-timber, and brick. His plans are painstaking, but rough-faced paper is not good for delicate line-work, and soon gets soiled when working. Each tenant has a very small food-place fitted with louvres next the main entrances, giving the impression to the casual visitor that w.c.s flank the hostel portals. In reality, they are upstairs, over the garden-doors. The verandah in front is really a very big porch with a lean-to roof and a gable over the doorway. The refectory has big windows, but it would not be very light built in thus.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The eleventh ordinary meeting for the present session of the Royal Institute of British Architects was held at 9, Conduit-street, W., on Monday evening, the chair being occupied by Mr. A. W. S. Cross, M.A., vice-president. Mr. E. Guy Dawber, hon. secretary, referred in sympathetic terms to the death of their friend, Mr. Walter Crane, elected an hon. associate three years ago, whose long and distinguished career as decorative artist, designer, book-illustrator, writer, and lecturer on the applied arts, had been so recently and fully told. He was, added Mr. Dawber, an artist of strong individuality and far-seeing influence, holding a high place in the estimation of artists and of the art-loving public, not only in this country, but on the Continent and in America. One of his greatest services to art was the foundation, seven-and-twenty years ago, of the Arts and Crafts Exhibition Society, of which he was for many years the president. A motion of regret at Mr. Crane's decease and of sympathy and condolence with the family was passed and directed to be conveyed to his son, Mr. Lionel Francis Crane, licentiate.

KING'S COLLEGE HOSPITAL, DENMARK HILL.*

*The new buildings of this hospital were illustrated in the *Building News* for June 2, 1905, from the drawings selected in competition. The elevation of the first section, with key plan, appeared in our issue for July 3, 1907, and the general elevations of the whole front in that for May 21, 1909; and a bird's-eye view and general plan on the occasion of the inauguration by the King and Queen, in our number for August 1, 1914.

A paper on this subject, profusely illustrated by plans and lantern slides, was given by the architect of the institution, Mr. William A. Pite, F.R.I.B.A. Its delivery took the form of a lucid and detailed 100-minutes' commentary on and detailed description of the working drawings, and, as might be expected, closely held the attention of the audience, which numbered many medical men and some engineers, as well as members of the architectural profession. In his preliminary remarks, Mr. Pite referred to the gaunt old hospital erected from Thomas Bellamy's designs on the site of the work-house in a squalid neighbourhood between Carey-street and Lincoln's Inn Fields. The present rectangular site of twelve acres on the northern slope of Denmark-hill, separated from Ruskin Park by four lines of sunken railway, was acquired and presented to the board of management in 1904 by the Hon. W. F. D. Smith, now Viscount Hambleden. Building operations were commenced in March, 1908, and the new edifice was opened by our present King and Queen on July 26, 1913. The general contour of the site produced a certain and definite problem, and the solution of this was at once effective and of far-reaching consequence. The ideal hospital site has a gentle slope towards the south, whereas the site at Denmark-hill had a steep fall in the opposite direction of about 15ft. in the total width of 528ft. The natural position for the wards to occupy was the southern portion of the site, and upon the placing of the administration block in relation to the wards hinged, to a great extent, the solution of the problem. Having decided upon the general disposition of the buildings, it was practically impossible to move the central axial lines of the whole scheme more than a few feet either way. It was found that a floor-line taken from about the highest level of the site—i.e., the southern boundary—permitted the inclusion of another floor under on the northern portion of the building. That is, by placing the first floor of the administration block on a level with the ground-floor of the ward blocks, that portion of the administration not immediately connected with the wards was at once thrown out of direct contact with the flow of ward traffic, whilst the nursing block was set in a position convenient for communication with the wards and their attendant units. The position of the wards and the administration block having been settled, the remainder of the buildings fitted in in a natural sequence. The site is divided into two portions, northern and southern, by the main hospital corridor. The ward pavilions occupy the whole of the southern portion of the site, stretching from east to west in an unbroken line, the chapel and central station bisecting this. The main hospital corridor divides the wards from the rest of the hospital, and provides inter-departmental communication. The central position occupied by the administration block permits the minimum amount of distance to be covered in communicating with any of the wards. The nurses' home is contained in the upper stories of this block. The eastern portion of the site is occupied by the out-patients and casualty departments, the casualty department occupying the extreme north-east corner of the site, and the courtyard formed between this block and the out-patients' department contains the entrances both to the departments mentioned and to the wards. Thus the entrances for patients of all descriptions are grouped round one courtyard. The keynote of the planning of the building has been "centralisation and radiation." The various staff entrances are all contained in the administration block, and all departments, self-contained when necessary, radiate round the main staircase at the junction of the administration block with the main corridor. The remaining or north-western portion of the site is occupied by the pathological block, the medical school, the operating-theatre blocks, and the isolation block. The original intention of placing the central heating and lighting station at the western extremity of the site was found impracticable owing to the level

of the ground. So its position was decided upon in the centre of the southern portion of the site, which is most economical for the runs of piping. The administration block and the two centre ward pavilions are the highest portion of the building. On either side are grouped the other buildings, all on a lower level, with the exception of the special ward block. The general motif of the design is inspired by the restrained school of the mature English Renaissance, but of necessity parts of the building, especially those which contain the more technical portions of the hospital, have a character entirely their own. A Roman Doric portico in Portland stone marks the main entrance, and colonnades of similar character connect this block with the out-patients' block and the medical school which flank it on either side. The ground story is faced with cherry-red bricks, the upper floors being treated in picked London stocks with red dressings. This brickwork is framed in by Portland stone quoins, and a massing of stonework in the centre and along the story under the large crowning cornice gives the effect of a dignified and broad treatment, further enhanced by the long sweep of the mansard roof, executed in Westmoreland slates. The flanking buildings, with the stonework massed in appropriate positions, both in the centre and under the lead-covered turrets, are not without character and interest. Internally, a hospital does not offer much scope for architectural treatment. But the hard, clean surface and finish required by the amenities of working and cleansing does not produce an altogether mechanical impression when sympathetically treated. In those places where a certain amount of treatment of a more architectural character is permitted, the requirements of hospital finishing still hold good, though in a much less marked degree. The main hospital corridor is 10ft. wide, and nearly 900ft. in length; it serves to connect the administration block with all parts of the building, and at the same time provides all inter-departmental communication. The various parts of the building are so disposed that it is rarely necessary for anyone in the course of duty to have to traverse the whole length. All large departments are entirely self-contained, and hence hundreds of people using these blocks never find their way into the main corridor. Between the various buildings "blow throughs" are introduced between the floors of the corridor. The floors are of asphalt, the corridor is lit and ventilated by windows, radiators being installed to insure adequate warming. The administration block is built in four portions, the front one being connected with the main hospital corridor by the other three. The ward pavilions are placed on the south side of the main corridor, the exception being the northern half of the special ward block. This block is placed with its central axis on the axis of the main corridor at the western end. The ward pavilions have their axis approximately north and south. The full scheme provides two central three-story ward blocks on either side of the chapel and central station, flanked by three two-story pavilions east and west, which, together with the special ward block just referred to, comprise a total of nine pavilions. At present the three eastern blocks are not built, as they are an additional story on the special block are contemplated for future extension. In the large space between the three-story and the adjoining two-story block has been placed a tennis court. The roofs of the wards are flat, covered with asphalt. The sanitary towers are roofed with Italian tiles, as are also the tank-houses on each of the three-story ward blocks. The elevations are treated in stock brickwork, with red dressings, and plinths of Crowborough stocks; artificial stone is used for the copings and plinth mould. Owing to the conformity of the site, the ground floor wards are on the level with the first floor of the administration block, where is placed the nursing administration. The space thus formed under the administrative portion of the ward blocks is utilised for various store

and other rooms. The main hospital corridor connects all the ward blocks on each floor, the principal staircase; with bed lift, serving all these floors. There are also subsidiary staircases and coal and diet lifts. A staircase, with bed lift, connects each floor of the corridor on the north side. The plans of all the ward units, with the exception of those in the special block, are essentially the same. A wide-arched opening leads directly from the main corridor into the ward corridor, 8ft. in width. Three pairs of swing doors are placed in this corridor. The ward sisters' sitting room is in close proximity to the ward. Four rooms open into the cut-off lobby; they are the patients' dayroom, nurses' lavatory, a sink-room, and the wardmaids' closet. Beyond this lobby are, on the left, the patients' clothes store, the duty room, with a small larder, and the clinical room. On the right are a linen room and two single-bed wards. The wards themselves are 108ft. 1½in. long by 26ft. 3in. wide and 13ft. high. They contain 24 beds, spaced about 8ft. 6in., centre to centre. Each bed has a window on either side. The windows are flush with the walls. These windows are entirely without boxing, sash-lines, and weights, being arranged on a system of one sash balancing the other on a pivot turning about a fixed point. A check is provided whereby the frames open to such a position that central ventilation is provided with a minimum of draught. By moving this check the sashes, continuing the movement in their grooves, form large hopper lights which can be considered equal to opening the whole window area. By releasing two catches, each sash can be swung in for cleaning. Above these are hopper ventilators, with glazed cheeks, reaching to the ceiling. The glass of these hoppers is obscured in order to diffuse direct sunlight, and thereby enabling the blind to be fixed at the transom level. The floors of the wards are of ferro-concrete, the space between the beams being occupied by hollow terracotta blocks. The warming is by radiant heat supplemented by the low-pressure steam radiators of the hospital pattern, with regulating F.A.I.S. Two dual stoves are placed in each ward. The walls and ceilings are finished with flat enamel paint. The doors are all flush hardwood, with double glazed flush bull's-eye lights where necessary. The small bays on each side of the ward contain basins for the use of the staff and shelves for sterilisers, lotion bowls, etc. At the end of the ward are large glass doors leading on to the sun balconies, and on either side are the entrances to the sanitary towers, through low, cut-off lobbies. The single-bed wards are finished in a similar manner to the main wards, having, however, Durato floors. The special ward block has on each of these floors two wards of 14 beds each, and is similar to the other wards in its internal arrangement. The two operating theatre blocks are placed on the north side of the main corridor, equally convenient in access from the wards and the administration. The out-patient department is to a great extent isolated from the rest of the building. The nucleus of the plan is the waiting hall, 93ft. by 42ft. On either side of this, separated from it by top-lit corridors, range the various departments with their consulting rooms. There are also consulting rooms at one end of the hall, accessible from the corridors, and beyond these is a third corridor, linking up the other two, and joining them to the dispensary. The dispensary block links up the out-patients' department with the main hospital corridor. The casualty block, placed at the corner of Bessemer-road and Denmark Hill, has its entrance opposite those of the out-patients' department, and from the same courtyard, connected with them by a glass shelter roof. Beyond the entrance vestibule is the casualty waiting hall, 34ft. by 30ft., finished in the same manner as the out-patients' waiting hall. A porter's office commands the entrance to this department, and also the waiting hall. In proximity to the entrance a staircase with bed lift communicates with the observation ward, placed over the casualty waiting hall. Eight cubicles (approximately 12ft. by 8ft.)

are disposed on either side of a low corridor, with doors to the corridor and to the flats outside; the dividing partitions are glazed to within 4ft. of the floor, enabling the cubicles to be nursed from either side. The cubicles have clerestory lights over the corridor, and a baffle prevents the perflation of air. The bathing and massage establishment and the electrical department are placed in a block connecting the out-patients' and casualty departments with the main hospital corridor. The pathological block and medical school are to some extent inter-communicating, and on plan and in operation they are intimately associated. The north-east angle of the site is occupied by an isolation block of four beds. The chapel is placed on the central axis of the building, and has seating accommodation for 250, a wide central space being provided for wheeled chairs. The groined roof is supported on ferro-concrete piers. The organ, pulpit, and many of the benches have been removed from the old hospital, as were the six stained-glass windows. In a niche is placed a picture of the "Descent from the Cross," removed from the old chapel, and the work of a Spanish master, Juan Baptista Juanes (1523-79). The lecturer described in detail the general construction and finishings of the hospital, explaining that the walls of the fabric generally are of dark, well-burnt London stocks, relieved by red dressings, Portland stone being used sparingly for quoins, cornices, etc. In the out-patients' department (the first portion built) steel stanchions and joists embedded in concrete for the floors and roofs were used. The whole of the floors, flats, and stanchions in the subsequent work has, however, been carried out in ferro-concrete. The greater portion of the buildings is covered with asphaltic flats, and it has been found after much experiment that a non-conducting blanket can be formed by laying immediately upon the concrete a layer of broken brick of small size, well punned to a thickness of about 5in., then screeding and asphaltizing thereon. In the wards hollow floors and flat roofs have been formed of terracotta arched tubes embedded in the concrete. Where roofs are used the trusses are of steel, to render them as fireproof as possible. The covering is of green Westmoreland slates with lead hips and ridges. Internal partitions of hollow terracotta are used for plastered walls, Shepwood glazed partitions being used in the sanitary annexes, where the walls are of glazed brick. The main waiting hall of the out-patients' department is faced inside with Iathern terracotta to the springing line of the barrel-vaulted ceiling. The walls throughout are, with few exceptions, lined with granite plaster finished with enamel paint. The staircases generally are finished with granolithic treads and risers, with the exception of the principal staircase, which is finished, together with the dado, in grey terrazzo. The walls of the boardroom and nurses' dining-room are panelled to dado height in oak and teak respectively, asphaltic being used for flooring in all the principal corridors and entrances and to the out-patients' main waiting-hall. Floors of a mottled character have been laid extensively throughout the buildings and to the margins of the wards, the filling of these latter being of linoleum. Teak wood-block floors have been used in the principal apartments, and the ward sanitary annexes, bathrooms, operating-theatres, post-mortem room, lavatories, etc., are laid with terrazzo floors. The floor of the kitchen is of red Ruabon encaustic tiles, the dado here and also throughout the stores department being of glazed bricks. The operating-theatre blocks have steel door-frames, specially detailed and made in this country. The internal doors are flush hardwood to all the "hospital" parts, deal enamelled doors being used in the nurses' home and other domestic portions of the building. Where possible, the ventilation is by natural means.

The Chairman asked Mr. Pite to state in his reply what was the total cost of the hospital—an inquiry which, apparently inadvertently, he did not answer in replying upon the discussion.

Dr. Arthur Headlam, a member of the

Hospital Committee from the beginning, proposed a vote of thanks to Mr. Pite, and incidentally observed that the competition conditions were excellently worked out by the assessor, Mr. Rowland Plunbe, the architect to the London Hospital. After his design was selected, Mr. Pite consulted, through a watching sub-committee, all departments of the staff, the result being that the requirements of no one section were over-emphasised or neglected. King's College Hospital was well planned and constructed, and in administration worked admirably, even now, when largely in use by the military authorities.

The Hon. Richard C. Parsons seconded the motion, and mentioned that although the hospital site adjoins an electric-lighting station, it was decided to provide their own installation; experience had shown that this was a wise move. On the other hand, they did not sink an independent well, as the water would be very hard, but took a supply from the Water Board's mains. Economy in maintenance was all-important in a hospital, and this was assured at Denmark Hill by careful planning.

Dr. Silk, Mr. Levett, Captain Tunnard, Mr. H. W. Wills, and Mr. S. Perkins Pick, of Leicester, also took part in the discussion. In replying, Mr. Pite expressed his indebtedness to his architectural staff, and to the resourcefulness of the builders, Messrs. Foster and Dicksee, of Rugby and Fulham.

THE ARCHITECTURAL ASSOCIATION.

The monthly meeting of the Architectural Association was held by adjournment on Tuesday evening, at the headquarters, 18, Tufton-street, Westminster. The chair was occupied by the acting-president, Mr. H. Austen Hall, F.R.I.B.A., and there was an overflowing attendance of those anxious to hear Mr. Hilaire Belloc.

The Acting-president proposed a vote of condolence to the family of the late Mr. Walter Crane (by whom the Association badge was designed), and to the relatives of Messrs. D. J. S. Dawson, T. W. Dowsett, C. G. C. Payne, and R. W. Wilson (members of the Association), who have fallen in the war. This was agreed to in silence, the members rising in their places. Two nominations for membership having been read, the Acting-president proposed a vote of thanks to the retiring members of the council.

"THE CHANGES IN THE CONCEPTION OF ARTIFICIAL PERMANENT DEFENCE."

In introducing the lecturer, the Acting-president observed that the presence that evening of such a distinguished authority on military matters as Mr. Hilaire Belloc gave a unique character to their meeting. It might not be out of place for him to mention the activities of the Association, in which the usual studies had been replaced by work which they believed to be of greater service to the nation at the present time. About 400 members were away with the forces, their recruiting bureau had enlisted over 500 members, and a committee, with Mrs. Maurice Webb as president, was sending out comforts to the troops and visiting the wounded. There was an urgent need for more funds as this beneficent work widened its scope.

Mr. Belloc, who was cordially received, said he had a very simple thesis to put before them that evening, one which was in no way technical, but was both practical and political. The subject of permanent fortifications was of high importance, because, with the exception of religion, no other necessity has so seriously affected the externals of national life. Whereas it was a commonplace that the character of fortifications must change with the development of weapons of attack, or the substitution of more formidable weapons, it had been the case that methods of defence were only tardily adapted to meet the fresh modes of attack, although it was manifest that the defenders must suffer grave disadvantages if they fail to avail themselves of the needed modifications in repelling the onslaught. The nations who realised the necessity for improvements in their defences, and acted

up to that knowledge, always benefited by that course of action; those who did not had to suffer. Thus, in the Civil War in this country in the middle of the 17th century the advisers of the king pinned their faith to the old form of castles, whereas the merchants and other civilians who attacked them adopted the latest improvements, and consequently gained the day. Let them consider the question in its elements. A fortification was devised as an obstacle or impediment to a hostile force which sought to advance over a certain area. Armies could move with freedom over a prairie; but it was obvious that if the defending side ploughed the surface they would retard the attacking force, and in proportion as difficulties in the way of movement were increased, so more time was gained by the defenders. There was no absolute defence—all the benefits of fortifications were only comparative. The creation of an impediment, either temporary or permanent, was of great importance to the people attacked. In considering military obstacles, one had to differentiate between various operations. If a river existed between the contending parties a bridge would enable one to attack the other more quickly, and it would be necessary to hold the bridge head against all comers to allow of free access to the attacking forces. As Napoleon said, the only use of a fortification is to gain time; it is not an absolute check, and there was the risk that it might delay the defending party from making a counter-charge when the attack weakened. They must postulate, therefore, first the purpose of a fortification, and, secondly, its limitations. A fortification had a sixfold purpose—(a) to retard the advance of attacking troops; (b) to be so arranged as not to endanger the egress of defenders for a counter-attack; (c) to provide the maximum of peril to the attacker, and (d) the minimum of peril to the defender; (e) to render it as difficult as possible for the enemy to use their weapons against the defenders; and (f) to render it as easy as possible for the defender to use his weapons. The danger was that it was practicable to emphasise the provision for any one of the six points, at the risk of neglecting the other five. All defence was a compromise between these six requirements, depending upon the weapon used and the extent of civilisation existing. The next point that had to be considered was the amount of energy to be expended in defence; in other words, the cost at which security should be maintained. All one's means could not be devoted to defence, or the nation would starve; the wisdom of economy was shown in deciding what proportion should be allotted to it. When the expense exceeded the value of the protection, the defence was abandoned. The French could have devoted all their strength and means to make the frontiers practically impregnable, and they could have withstood the invasion of the Germans for a considerable period; but it would not have been worth the effort that such a course would have involved. A fortification, once constructed, acted as a retarding influence against undertaking further works. Now, he had taken a survey of the history of fortifications generally. From the earliest times it was realised that you could protect yourself by a mound or hill, and that if you formed your mound by placing on your land the earth dug from a ditch at the boundary, you increased the difficulty of reaching you. Such a defence satisfied the six requirements already stated. Even monkeys, when attacked, sought to get upon a hill. The first development of the mound was a wall built on it, and so superior in checking an advance and in protecting the body from missiles was the perpendicular bank of stone, that it was universally adopted. In time it was demonstrated that the nearer to the wall the enemy advanced, the better he was protected; a curve could be drawn from the edge of the wall within which the peril to the attacking party steadily decreased till there was a dead area beneath it. True, the defender could drop missiles over the wall, but in doing so he exposed his body to danger. The next improvement was to flank

the wall by a stronger and loftier portion, so that the dead space could be commanded. The addition of towers to a wall marked a certain definite stage in civilisation. The use of a wall was also handicapped by difficulty of egress, and as the defender desired in turn to pursue the attacker, an opening defended by a gate was provided. Only a few at a time could pass through the gate, thus weakening the counter-attack, and every increase in the width of the gate or opening decreased the value of the wall. The next step was to continue the ditch in front of the gate, and to suspend a platform bridge over it, defended in turn by a curtain. Then narrow slits were cut in the thickness of the wall, through which missiles could be projected, while affording a small target. All these developments of fortifications were only very slowly adopted, centuries elapsing before known improvements were in general use, and everywhere defence lagged far behind the new forms of attack. Thus cannon came into use long before the principles of defence were grasped and acted upon, and for some time they were not utilised to the full for attack. Thus cannon were employed about 1330, and for a long time only small balls were projected, and during a generation those who used cannon chiefly sought to frighten their enemies by the noise of explosions. Between 1360 and 1390 no really big balls, which could batter walls continuously and severely, were discharged. About 1380 a mortar of 25in. calibre was used in the Low Countries; but in the days of Elizabeth, two centuries later, guns of only half that diameter were in use. About 1494 it was realised by some Italians that earthworks were more efficacious in stopping cannon-balls than stone walls; but it took many generations before this defence was generally adopted. Thus the politician Machiavelli, about 1512, and the etcher, Albert Dürer, in 1531, wrote on the advantages of earthworks; but two generations had passed before people grasped the idea. As a result of cheap experiments made at the beginning of the 17th century with earthworks thrown up before forts, the English language was enriched with the word "bulwark," and French with the word "boulevard." About half of the 17th century had elapsed, however, before the idea penetrated the thick heads of people that an earthwork was in every way an improvement on a castle. About the middle of the nineteenth century the greater range of the gun was realised, and its rifling added to the accuracy and penetrative power of the projectile, and compelled men to think of defence. As the range and power increased, besiegers were able to use heavier guns and at a greater distance. That sealed the doom of the enceinte and brought the detached fort into being. Just about the time when this became evident, the new mode of defence became obsolete. The development of the howitzer allowed them to fire upwards over a hill or other obstacle, but it had the disadvantage of a smaller range. The invention of the high-explosive shell filled with picric acid, of the mobile howitzer, and of the disappearing platform were successive developments which affected defensive works, and led to the evolution of comparatively small forts with temporary works between. The present war had led to great modifications in fortification. There would always be a need for permanent fortifications, and an increasing demand for greater expenditure. We should need imperatively in the near future in this country a careful study of emplacements concentrated on certain places, and the need for secrecy of these preparations would be all-important. Concreted trenches, afterwards covered in, should be permanently provided at given points, and these will, and must, be protected by the heaviest possible weapons. Alike in naval and military warfare, they saw that victory always rested with the superior weapon, and any economy was wasted. Then there must be the largest possible accumulation of stores, both of food and munitions; they would require a very large garrison of well-trained and highly-disciplined men, numerous aviators, and plenty of room in which to embark and

manœuvre them. The land bases of our naval forces must be adequately protected, for the capture of these bases would be the final and crushing blow. Not only must this country be thus protected by great fortified camps, but all our colonies, and especially Egypt and India.

Mr. C. Stanley Peach, in moving a vote of thanks to Mr. Belloc, said they had rarely listened to a lecture of such suggestiveness and importance. Unfortunately, in the past our architects had devoted their abilities and energies to religious and domestic problems rather than to military requirements.

Mr. W. Curtis Green seconded the motion, remarking that the country was under an enormous debt of gratitude to Mr. Belloc for bringing within the comprehension of men of ordinary intelligence the problems of modern warfare.

The Chairman, in putting the motion, which was carried by acclamation, said architects would do much for their country in designing not only camps and barracks, but works of national defence.

Mr. Belloc, in responding, said he merely spoke as a layman who had read a few books and had watched the trend of affairs. He wished to express his conviction that after the war permanent fortifications would be still more necessary than now.

OBITUARY.

We regret to hear Mr. Henry Robinson, F.S.I., Professor of Civil Engineering at King's College from 1880 to 1902, and since that time Emeritus Professor, died at his residence in Abbey-road, St. John's Wood, on Wednesday in last week, aged 78 years. Professor Robinson was a younger brother of the late Mr. Vincent Robinson, C.I.E., the connoisseur of Oriental art, and his sister, Miss Elizabeth Julia Robinson, obtained some repute as an etcher. After receiving his professional education in the Applied Science Department of King's College, London, he joined the staff of the late Lord Armstrong at Elswick, and then undertook the independent practice as a civil engineer which he carried on for more than forty years in Westminster. He had charge of many important works, including railways, water supply, sewerage, and the electric lighting installation at St. Pancras. He engineered the first public hydraulic power scheme in this country at Hull, and took an active part in promoting the distribution of energy in other towns by hydraulic power, compressed air, and electricity. Professor Robinson contributed largely to engineering literature. He was a past president of the Society of Engineers.

Cardinal Lucon, the Archbishop of Rheims, states that his cathedral will be left in its present ruined condition for a whole year after the conclusion of peace, and will be made the goal of pilgrimages.

At Burnley, last week, a Local Government Board inquiry was held before Mr. F. O. Stanford as to an application from the corporation for sanction to borrow £23,030 for works of sewage-disposal.

A Local Government Board inquiry was held at Stockton-on-Tees on Monday, before Mr. H. Shelford Bidwell, as to an application from the corporation for sanction to borrow £10,100 for their electricity undertaking.

The damage to All Saints' Church, Scarborough, at the bombardment was so extensive that the church has been closed since then. The eastern portion of the nave has now been reopened, the other portion being partitioned off. The vicar on Sunday informed the congregation that the work to be done at the boarded-off portion would entail a further expenditure of about £910.

The corporation of Lowestoft have adopted amended plans by their borough engineer, Mr. G. H. Hamby, for works of sea-defence. Those for the protection of the North Beach will consist of two groynes, and are estimated to cost £2,452. The works to the South Beach will be more extensive, and comprise seven groynes, including a spur to the South Pier, and are expected to involve an outlay of £4,905.

Our Illustrations.

ENGLISH NORMAN DOORWAYS.

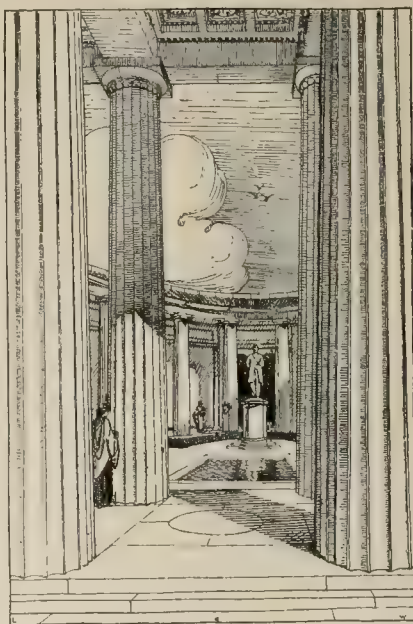
Some short time since, a very charming collection of excellent photographs of English Norman doorways was lent for exhibition to the Reading Museum and Art Gallery by Mr. C. E. Keyser, M.A., F.S.A., of Aldermaston Court. The assemblage comprised no less than 214 examples. Through the courtesy of Mr. Keyser we are enabled to-day to reproduce eight of these typical specimens, selected among the finest instances from Norfolk, Yorkshire, Gloucestershire, Berks, and Buckinghamshire. Many others were shown illustrative of figure-work and symbolic sculpture, either on the tympanum or reveals or impostes, as the case might be, in arched or other doorways. Portals of that sort are familiar enough at Kilpeck Priory Church, Hereford, at Ely Cathedral in "Monks' Walk," or in "the Prior's Doorway"; also at Prestbury Church, Cheshire and Ilfley Church, Bloxham Church, and Burford Church—all in Oxfordshire. There was, in fact, a special series of photographs devoted exclusively to the last-named county, thus making a locally complete set. When we say that Mr. Keyser has garnered together the finest Norman doorways in England, it will at once be agreed that his collection ranks as being quite unique, furnishing as it does a most comprehensive idea of the wonderful versatility and elaborate skill of our vernacular old Norman masons, whose work is so very similar, and yet eminently true to tradition, notwithstanding its varied dexterity and originality in treatment. Roughly, the work illustrated dates mainly from the first half of the 12th century. With the exception of the famous ruined church of Castle Acre Priory, Norfolk, all the doorways which we have herewith chosen for our plate to-day illustrate much lesser-known specimens, and two of the prints are devoted to studies of detail, both being eminently characteristic of this marvellous period anterior to the Gothic development in English Gothic architecture, which speedily reached its zenith in the 13th century. The prints, made for Mr. Keyser to send us, were, we understand, printed by Mr. Marcus Adams, of Messrs. Walter Adams and Sons, Blagrove-street, Reading. There is no need to give here any sort of individual description to the particular doorways shown on our sheet. An apposition of each specimen, need not be attempted, inasmuch as the work is admittedly more of antiquarian value than suggestive of architectural achievement considered from the point of contemporary building possibilities.

THE NATIONAL BIRTHPLACE MEMORIAL TO PRESIDENT MCKINLEY AT NILES, OHIO, U.S.A.

SELECTED DESIGN.

The comparatively unimportant town of Niles, on the St. Joseph's River in Ohio, has naturally gained renown in consequence of having been the birthplace of the late President McKinley, and at Niles the American people have decided to erect the National Memorial to perpetuate his life and work. The originator of the undertaking, which will rank among the famous monuments of the country, is Mr. Joseph G. Butler, jun., of Youngstown, the President of the Memorial Association which was incorporated by Act of Congress about a year ago. The citizens of Niles have provided a fine open square as a site for the building, with a frontage to main street. The cost of this land was £25,000, and the estimated cost of the structure itself is stated at £40,000 in addition. The money has been obtained by public subscription, and the work will be proceeded with immediately. The chosen design is by Messrs. McKim, Mead, and White, of Park Avenue, New York, and we are indebted to the architects for the loan of the photographs reproduced among our illustrations to-day of their plan and elevation submitted by them and

selected by the jury in the recently-held competition among architects practising in the United States. The competition drawings were sent in last December. In the middle of the building a handsome colonnaded open cortile, with an apsidal-ended peristyle, forming the tour de force as an appropriate and monumental setting for the full-length heroic statue of the late American statesman, the author of the celebrated Tariff scheme of the States. The accompanying little perspective sketch supplies a good idea of the architectural effect viewed from between the columns of the frontage end, and overlooking the marble-lined pool-fountain in the centre of this open "quad." The Doric Order of fluted monolithic columns extends in massive simplicity up through the two floors of the library and auditorium, comprising the wings right and left of the middle enclosure, which has a pent roof, with a richly-coffered ceiling, covering in the aisle or paved walk round behind the portico frontispiece. The auditorium to the right-hand furnishes seating capacity for a thousand persons, and it measures 75ft. by 53ft., giving about 4,000ft. super on the lower level, and in addition there is a gallery carried round three sides, making up a total



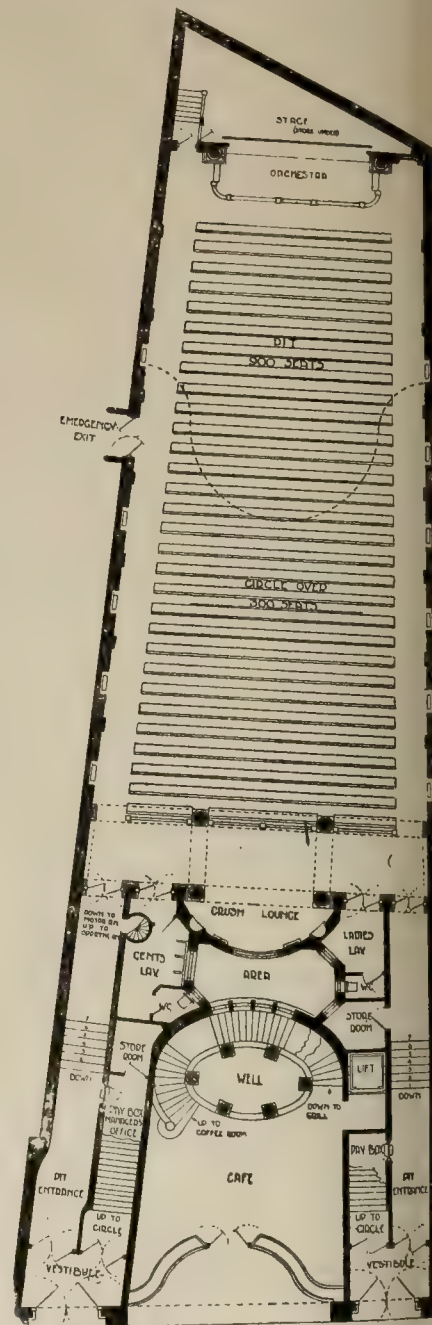
Sketch View looking towards the McKinley Statue in Colonnaded Open Court.

seating-space of some 5,800ft. super. The segmental end gives room for a chorus or orchestra, with a stage-approach below in the centre of the apse, as well as some retiring-rooms for the performers, and stairways rising from the lower floor. To the left is a commodious library, forming an integral part of the memorial scheme, with a spacious lending department, also a top-lighted court in the midst of the library building. Reading-rooms are located at the sides, and also good relic-space. The stack-room is carried up three stages. On the upper floor, towards the front, is placed a museum, to be available as a lecture-room, while to the rear of the premises is a department for unassigned books, also a room for the trustees' meetings. Toilet-rooms and lavatories occur over the receiving-room and janitor's room. These conveniences are set in the angles beyond the stack-room. The lay-out of the garden-ground of the site forms an important and appropriate feature such as the architects of this successful scheme might be relied upon to furnish. The building will be eminently dignified and becomingly simple, as may be judged from the drawings which we here publish. The plan illustrates the main floor taken just above the level of the land. The façades throughout will be carried out in granite, and the execution will be under the superintendence of the famous firm of architects, the "winning bidders," in

this competition, the results of which cannot fail to interest our readers both at home and abroad.

RUTHERFORD COLLEGE FOR GIRLS, NEWCASTLE-ON-TYNE.

A new assembly-hall is about to be erected and a limited competition has recently been held, with the result that the design sent in by Messrs. Marshall and Tweedy, 17, Eldon-square, Newcastle, was awarded first position. The architects have received instructions to prepare plans for submission to the Education Department. The scheme includes



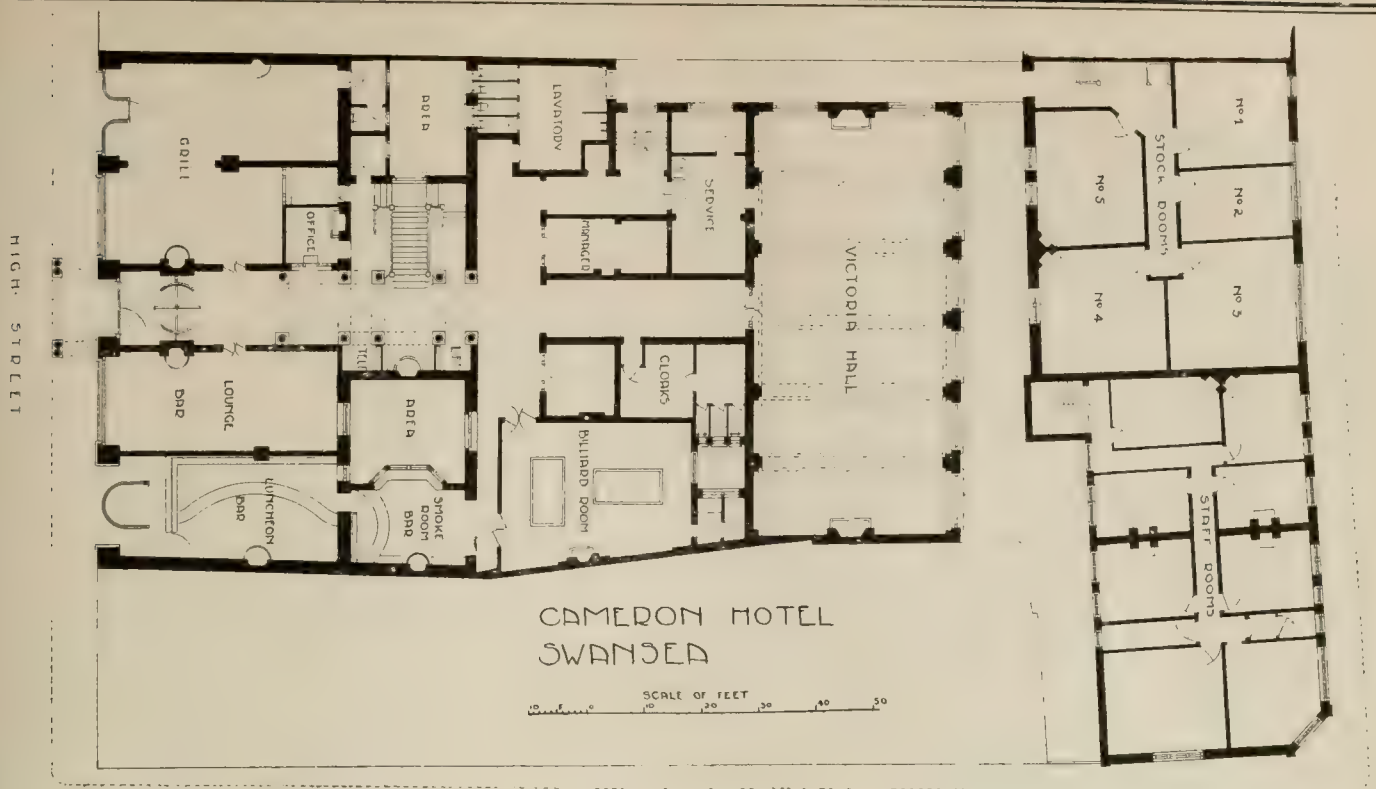
THE CARLTON CINEMA AND RESTAURANT, SWANSEA.

Mr. CHARLES T. RUTHEN, Architect.

the provision of an assembly-hall for 1,000 students, cloakrooms, lavatories, and connecting corridor to the existing college. The hall has been placed centrally on the site, and well away from the college teaching rooms. The buildings will be erected in local sandstone, the interior being plastered with panelled wood dado. An early start will be made with the erection of this admirable building.

A CO-OPERATIVE HOSTEL FOR A GARDEN SUBURB.

(The description of these designs will be found in the Referee's report on pages 375-6-7.)



CAMERON HOTEL, SWANSEA.—Mr. CHARLES T. RUTHEN, Architect.

THE CAMERON HOTEL, SWANSEA.

This new hotel has been erected upon the site formerly occupied by the Cameron Arms Hotel, one of the oldest hotels in South Wales, about 100 years ago, perhaps, one of the best-known hotels in Wales. The Victoria Hall, together with the staff quarters, were erected some twelve to fourteen years ago, the intention being at that time to proceed with the entire premises; but difficulties of ancient lights and easements, together with hindrances in connection with finance, brought the works to a standstill. The premises, as shown in the illustrations, were recently completed, and form one of the most modern of provincial hotels. The High-street façade is carried out in red Wilderness stone to the second-floor level, and from thence in red pressed brickwork with stone dressings. In addition to the accommodation shown upon the ground floor, a large coffee-room, together with ladies', commercial, billiards, smoke, and other rooms are provided on the second floor, in addition to bedrooms and necessary accommodation. Some 100 bedrooms are provided in all, and in the basement floors spacious kitchen and service accommodation. A large, separate building, containing stockrooms having communication with the main premises, has also been provided, as shown upon the plan. The entire cost of the premises, including the work carried out in the first instance, was about £45,000. The completion of the premises was carried out by Mr. Charles T. Ruthen, architect, Swansea, the contractors being Messrs. Henry Billings and Sons, Swansea.

THE CARLTON CINEMA AND RESTAURANT, SWANSEA.

These new premises have been erected in Oxford-street, Swansea, upon the site formerly occupied by the old Jeffrey's Arms Hotel, one of the famous old posting-houses of Gower. With the exception of the entrances to the Cinema, the whole of the front portion has been planned as an up-to-date restaurant. The basement floor contains the dining-room, which, by a liberal use of panelling, glazed with silvered plate and semi-indirect electric lighting, forms a very comfortable and bright room. The café proper is situated on the first floor, having a balcony round the four-sides, adding greatly to the effect and available accommodation. The second floor also contains a large tea-room. All the floors are served by an auto-

matic press-button passenger-lift, and in addition, a very fine elliptical staircase in reinforced concrete, finished in terrazzo work, with wrought-iron balustrading. The orchestra-stand is situated at the bottom of the stair-well, and the top, at the roof-level, is covered by means of a fine painted-glass sliding dome. Stillroom and lavatory accommodation is provided on each floor. The front elevation has been carried out in white "Doulton's Carrara," supplied by Messrs. Doulton and Co., the Royal Doulton Pottery, Lambeth, with the bases and caps of the large columns in bronze ware, and the main entrances in grey unpolished granite. A feature of the front is the large curved bay, giving light to the three upper floors. The Cinema has seating accommodation for about 1,200 persons. The circle is composed entirely of reinforced concrete, without the use of columns at any point. The lighting is by means of plaster bowls, entirely upon the "indirect system," the "dimmer switch" being used for the gradual increasing or reducing of the light. The Carrara was supplied and fixed by Messrs. Doulton and Co., Ltd. The electric lift is by Messrs. Smith, Major, and Stevens, Ltd. The handsome marble columns and pilasters in the lounge, with their moulded bases and carved caps in statuary, and shafts in piastrelia, are by the Marble Mosaic Co., of Mitchell-lane, Victoria-street, Bristol. They also executed the whole of the terrazzo flooring and a terrazzo spiral staircase, together with the marble-tile and Roman-mosaic paving. The general contractors are Messrs. Henry Billings and Sons, Swansea, the total cost of the works being about £15,000. Mr. Charles T. Ruthen, of Swansea, was the architect.

In view of the increase of work that has been laid on the Local Government Board for Scotland under the Housing Acts, and more particularly in connection with the scheme for the housing of Admiralty employees at Rosyth, the Board have appointed Mr. George D. Macniven, L.R.I.B.A., of the firm of Messrs. Greig, Fairbairn, and Macniven, architects, to be assistant architectural inspector for the period of five years. Mr. Macniven received his early training under Mr. G. Washington Browne, R.S.A., and later served as a draughtsman in the office of Messrs. Dick Peddie and Washington Browne, where he gained considerable experience in connection with the erection of public buildings and other works. Mr. Macniven for the past five months has also occupied the post of assistant master of the architectural section of the Edinburgh College of Art.

COMPETITIONS.

WHITEHAVEN HOUSING COMPETITION.—Members of the Society of Architects are notified that some of the conditions of the above competition are considered unsatisfactory. The society is in communication with the promoters, and is endeavouring to get the conditions amended.

An inquiry was held at Limerick on Tuesday into an application of the corporation to the Local Government Board for sanction to a loan of £6,223 for the erection of working-class dwellings.

Mr. Joseph M'Nicol, chief assistant gas engineer to the Warrington Corporation, has been appointed to succeed Mr. J. H. Taylor as engineer and manager of the Mossley Corporation gasworks at a commencing salary of £250 per annum.

The death took place at Knutsford on Friday of Mr. John Acton, at one time a large builder and contractor in the Mid-Cheshire district. He erected numerous mansions in Cheshire for city merchant princes, and had a good connection as a church-builder.

At the City Hall, Sheffield, on Tuesday, Mr. H. Shelford Bidwell, an inspector of the Local Government Board, held an inquiry into an application by the city council for sanction to borrow £105,186 for street-improvements and the extension of the electricity undertaking.

Mr. Percy E. Nobbs, M.A. (Edin.), F.R.I.B.A., Professor of Architecture at McGill University, and a partner in the firm of Nobbs and Hyde, Montreal, is going to the front with the Northumberland Fusiliers of Canada. He was the Tite Prizeman in 1900, and the Owen Jones Student in 1903.

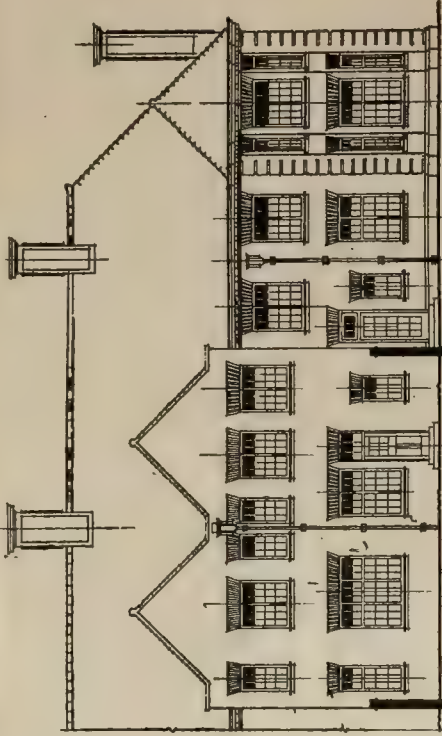
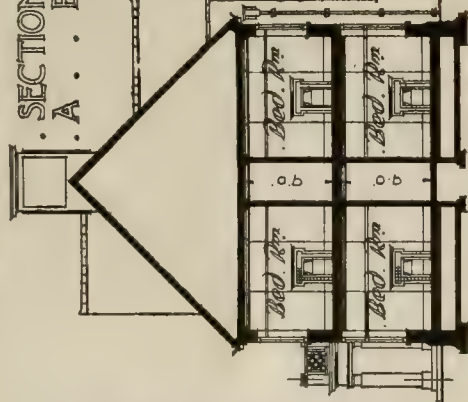
The new chancel and chapel of St. James's Church at the corner of Mitcham-lane and Welham-road, West Streatham, were dedicated by the Bishop of Kingston on Wednesday week. The church, as completed, consists of nave and side-aisles, baptistery, chancel with vestries and organ-chamber over on the south side, and chapel on the north. Mr. W. S. Weatherly is the architect. The builders were Messrs. Garrett and Sons, Balham-hill.

Major-General James Robert Mann, C.M.G., whose death occurred on March 25 at Highfield Lodge, Tilehurst, in his ninety-third year, entered the Royal Engineers in 1840, and retired thirty-three years later. He was Surveyor-General and Member of the Legislative Council of Mauritius in the "fifties." He became Director of Public Works in Jamaica and a Member of the Legislature of that island in 1866, and so continued for twenty years. In 1877 he administered the Government of Jamaica.

View from S.W.



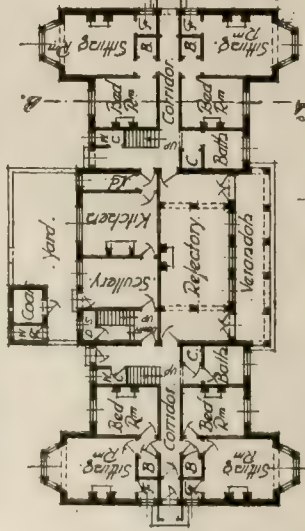
SECTION
A . . B .



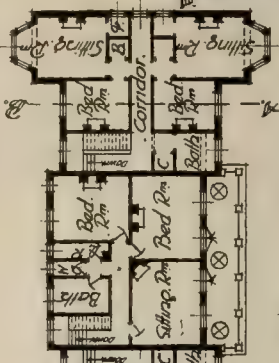
PART. EAST. ELEVATION.

BND C

*Subject of
Feb. 15.*



GROUND
FLOOR PLAN



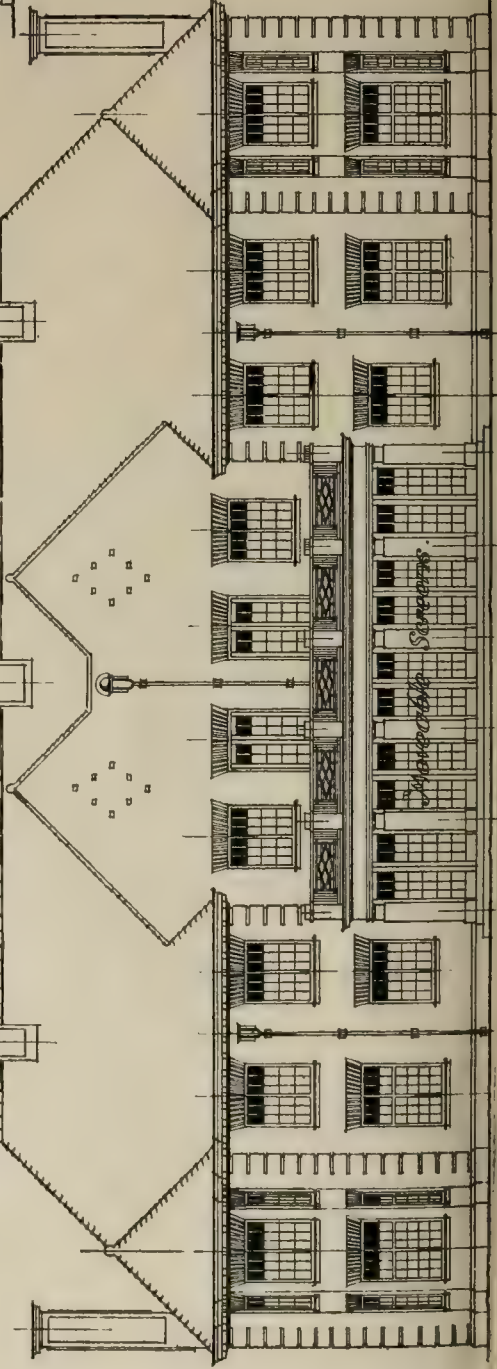
FIRST
FLOOR PLAN

WEST.

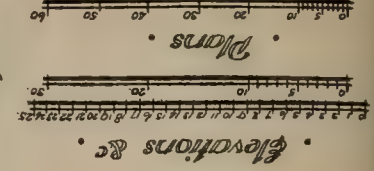
ELEVATION.

PLACED THIRD

NORTH. ELEVATION.



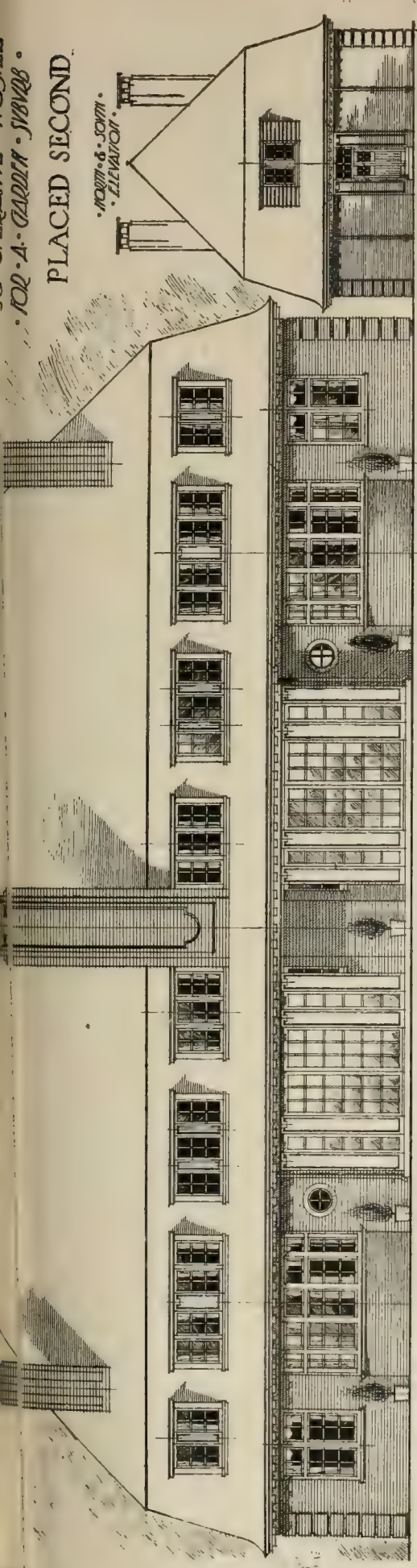
Scales of feet.



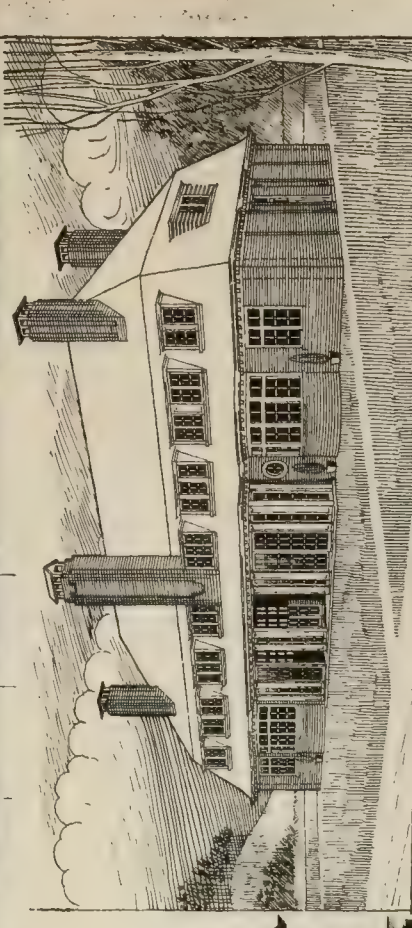
DESIGN
FOR A
SMALL
HOSTEL
by
WALBROKE.

PLACED SECOND

• NORTH • & • SOUTH •
• ELEVATION •

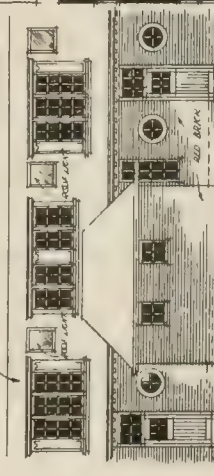


• WEST • ELEVATION •

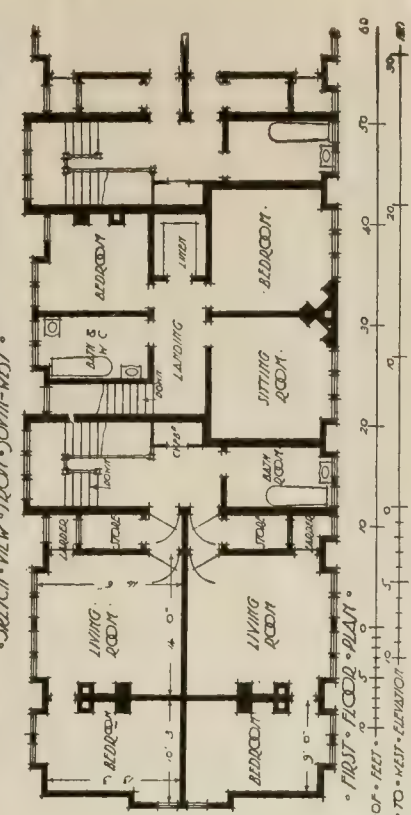


• CENTRE OF EAST ELEVATION •

THE DRAWING MAPS OF THIS ELEVATION ARE
SHOWN IN THEIR RELATION TO WEST ELEVATION
AS INDICATED ON EAST ELEVATION. ALL DIMENSIONS
AND ROOMS CORRESPOND WITH EAST ELEVATION.



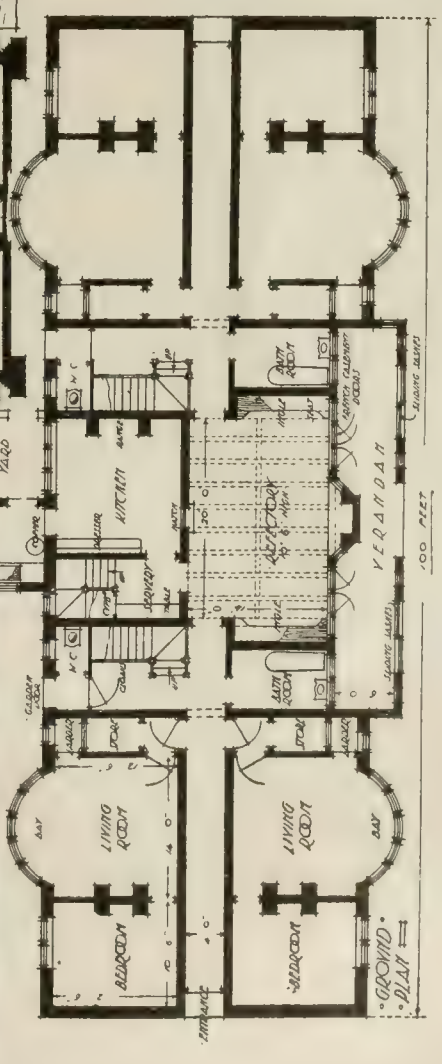
• SKETCH • VIEW • FROM • NORTH • EAST •



• FIRST • FLOOR • PLAN •

• SCALE • OF • 1/2" = 1' •

• SCALE • OF • 1/2" = 1' •



“ BUILDING NEWS ” DESIGNING CLUB: A CO-OPERATIVE HOSTEL FOR A GARDEN SUBURB.

Designs by “ BOURNEMOUTH QUEEN ” (Placed Second) and by “ WALBROKE ” (Placed Third).

THE LONDON COUNTY COUNCIL.

At its meeting on Tuesday the London County Council approved, unanimously and without discussion, the appointment of Mr. James Bird as Clerk, in succession to Sir Laurence Gomme, who retired on Wednesday, the 31st ult. Mr. Bird is at present the Deputy-Clerk of the Council. He has been in the permanent service of the Council and its predecessors since 1881, when he was appointed in the fourth class after competitive examination. The General Purposes Committee, in recommending his present promotion, stated that his exceptional ability had been noted by the Council on several occasions, and in 1905 he was promoted to be Deputy Clerk at a salary rising from £800 to £1,000. He will receive a commencing salary of £1,600 a year, rising by annual increments of £100 to £2,000 a year, with pension rights upon his existing salary of £1,000 a year. Mr. Bird thanked the Council for the appointment, not only on his own behalf, but on that of the staff, as affording proof that the Council were prepared to appoint to the highest positions in its gift men who had served in the lowest ranks of the Council's service. It was resolved, on the motion of Mr. R. C. Norman, seconded by Sir J. W. Benn, that the Council, on the conclusion of Sir Laurence Gomme's tenure of the office of Clerk, place on record their high appreciation of the great ability and strong sense of public duty which had marked his official services. Sir Laurence Gomme said he had always been ambitious for London, which he believed was going to take a very much greater position in a very much greater Empire, and he was quite certain that that Council would so carry out its duties that all sections of Londoners might look to it for guidance, help, and strength.

The Establishment Committee reported the death upon March 18, at the age of sixty-four, of Mr. J. R. Grimshaw, assistant district engineer in the chief engineer's department, and recommended that a gratuity of a year's salary, £450, be granted to his representatives.

The Education Committee reported that they had had under consideration the question of the right of the district surveyors under the London Building Acts to claim fees under those Acts in reference to works carried out in connection with the Council's school buildings, which the Council contend are exempt from Parts VI. and VII. of the Acts. In regard to new buildings, it has been decided by the High Court that, having regard to the provisions of section 3 of the Education (Administrative Provisions) Act, 1911, such buildings are exempt from the provisions of the Building Acts, including provisions as to giving notice to the district surveyor, and payment of fees to him. But alterations to existing buildings do not come within the exemption conferred by the said section. Having regard, however, to the decided cases, the Committee argued it as questionable whether the district surveyors can substantiate a claim in cases in which only constructional matters are involved, such matters being dealt with by Parts VI. and VII. of the Act of 1894, from which exemption is claimed, and they accordingly instructed the solicitor to take action to resist the claim of the district surveyor in connection with the work of remodelling the Southwark Park School, Rotherhithe. In that case, the district surveyor took out a summons against the Council's contractors, Messrs. Akers and Co., Limited, for fees amounting to £7 6s. 3d., and the magistrate (Mr. Gill) upheld the district surveyor's claim. Being advised that the correctness of the magistrate's decision is open to question, they recommended that steps be taken to appeal against the magistrate's decision.

The General Purposes Committee reported the receipt of applications for increases in wages from employees in the main drainage branch of the Council's service on the ground of the increased cost of living, the nature of their work, and advances which had been granted to men in a similar class by other authorities and private employers.

The Council having adopted a scheme of grants, the committee was not prepared to recommend the reopening of that question, and the others were matters for the Main Drainage Committee. Mr. H. Gosling moved that the report should not be received, and a long discussion followed. Mr. Gosling's motion was defeated.

The Council approved without comment the recommendations of the Fire Brigade Committee for increased rates of pay to officers and men of the Fire Brigade. The annual cost of the augmentation is estimated at about £11,000.

The Highways Committee reported upon the strike of electrical wiremen at the Council's tram-repairing depot, and stated that the men's representatives have now decided to abide by the award of Sir George Askwith in the Council's favour.

The same committee recommended that alterations and additions be made to the tramways sub-station at Woolwich, and for laying additional cables at a total estimated cost of £14,000.

The Building Acts Committee reported that they had had under consideration the question of the appointment of a district surveyor for the district of Rotherhithe, to fill the vacancy caused by the appointment by the Council on February 16 last of Mr. C. A. Daubney to the district of Bermondsey. The gross fees received in respect of the district of Rotherhithe during last year amounted to £327. Applications for the appointment were invited by public advertisement, and twenty-one were received. Two of the applicants had not obtained the necessary certificate of competency to perform the duties of a district surveyor. After consideration of the merits of the remaining candidates, seven of whom were seen by the Committee, they recommended the appointment of Mr. Joseph Edward Mundell. In compliance with standing order No. 94, they submitted the names of three candidates as follows—Mr. J. E. Mundell, Mr. J. Dovaston, Mr. F. P. Watson.

Mr. A. T. Taylor, F.R.I.B.A., chairman of the Improvements Committee, replying to questions as to the reported intention of the authorities of St. Thomas's Hospital to build a hostel on the island space in Lambeth Palace-road, said inquiries had been made as to the conditions under which the land had been conveyed to the hospital, and the governors of the hospital had been urged to meet their requirements, if possible, without building on the site.

The Council adjourned to April 27.

Mr. George S. Barry, of the city surveyor's office, Dundee, has been appointed road surveyor of the Deer district of Aberdeenshire, in succession to Mr. George Calvert, at a salary of £300 per annum.

It has been decided to proceed with the building of a new parish church for Lochgelly at a cost of £3,000 or £4,000. Plans have been prepared and approved by the presbytery. The church will contain 800 sittings, with a hall attached to hold 200.

At the last meeting of the Kesteven County Council it was decided to raise the salary of Mr. Purser, the surveyor, from £400 to £475, it being understood that he would withdraw his candidature for the post of county surveyor of Nottinghamshire.

Sirry Pasha, Minister of Public Works, inaugurated last week the Cairo drainage scheme, which is practically completed. The first part of the ceremony took place at the pumping-station of Kafrgamous, and the second part at the sewage-farm at Khanka.

Three new sets of cottage baths erected by the Bradford Corporation at Greengates, Brownroyd, and Great Horton, have been opened. They comprise part of the scheme adopted by the city council about a year ago for the provision of six sets of baths at an estimated cost of £8,100.

Swansea Town Council have instructed their housing committee to accept a tender for the erection of 100 houses for the working classes at Town Hill, such tender to include an option for the erection of a further 400 houses, or, in the alternative, to accept a tender for the whole 500 houses.

Engineering Notes.

NORTH WOOLWICH.—The new King George Dock, to the south of the existing Royal Albert Dock, at North Woolwich, begun for the Port of London Authority in the summer of 1913, will be completed by August in next year. The extension comprises a wet dock, with an approximate area of 64 acres and a depth of 35ft., with about 9,400 lineal feet of quayage; a dry dock 750ft. by 100ft., with a depth of 35ft. over the blocks; and an entrance lock 800ft. by 100ft., with a depth of 45ft. at Trinity high-water. The walls are of concrete; the southern one is now almost completed for a length of over 4,000ft. The side walls of the entrance lock are also approaching completion. The Manor Way-road, which crosses the site of the new dock, will ultimately be diverted eastwards and carried over the new entrance lock by a double bascule bridge worked by electric power. Reinforced-concrete piles are ready for the foundation of sheds. Jetties—equipped with electric cranes—are being provided parallel to the quay, with space between them and the quay for barges. The Port Authority has further decided to erect at the Surrey Commercial Docks sheds having an area of about 32,000 square feet.

Building Intelligence.

WALLASEY.—Rapid progress has been made by the builders of the new Town Hall during the year which has elapsed since—on March 25, 1914—his Majesty laid the foundation-stone. The third and last floor has now been reached, and the isolated building is already presenting an imposing appearance. The style is Renaissance, and freely treated, and the frontages are of stone. It is expected that the builders' work will be finished by June or July of next year. The Council-chamber, which is on the river side of the building, will be 50ft. by 34ft.; while the public hall, which is to extend across the Brighton-street front of the first floor, will be 86ft. by 50ft., and will be available for public meetings, balls, theatrical entertainments, public meetings, balls, theatrical entertainments already making preparations in regard to the furnishing, it being intended to move the municipal staff to their new quarters department by department, without regard to the formal and official opening—probably in the early autumn of next year. The architects are Messrs. Briggs, Wolstenholme, and Thornely, of Liverpool, whose design selected in competition was illustrated in our issues of May 10, 1913.

Mr. J. Bowen, B.E., Claremorris, has taken up his new duties as county surveyor of Waterford as from April 1. His headquarters will be at Dungarvan.

The Bishop of Southampton, on Thursday in last week, dedicated a new chapel added to St. John's Church, Ryde, as a memorial to Lord Calthorpe by his widow.

A women's hospital and nursing home at Balgarn, Dundee, was opened last week. It is of two stories, and accommodates twenty patients and a staff. The architect is Mr. James Findlay, of Dundee.

The fine church-tower of Northop, Flintshire, which dates back to 1571, has been found to be in a very serious condition, and a committee has been formed, of which Lord Justice Bankes is treasurer, to raise funds for the work of restoration. It is estimated that the work will cost £1,500. Owing to the serious state of the tower, work will be commenced forthwith.

Three postmen's district offices are about to be built by H.M. Office of Works—two in Edinburgh, and one in Kirk-street, Leith. Plans have been prepared for the buildings in the Edinburgh office of the Office of Works. The office for the Western District of Edinburgh is to be in West Park-place, off Dalry-road. The building will be of brick, with stone dressings. The front portion of the building is of two stories, and the sorting-office is a single-story building of about 55ft. by 47ft. The office will be lit principally from the roof.





CASTLE ACRE PRIORY CHURCH, NORFOLK:
CENTRAL WEST DOORWAY.



ASKHAM BRYAN CHURCH, YORKSHIRE:
SOUTH PORCH.



COMPTON GREENFIELD CHURCH, GLOUCESTER,
DETAIL OF SOUTH DOORWAY.



HORTON CHURCH, BUCKS.
NORTH DOORWAY.



BRAYTON CHURCH, YORKSHIRE:
SOUTH DOORWAY.



CHARNEY BASSETT CHAPEL, BERKS:
SOUTH DOORWAY.

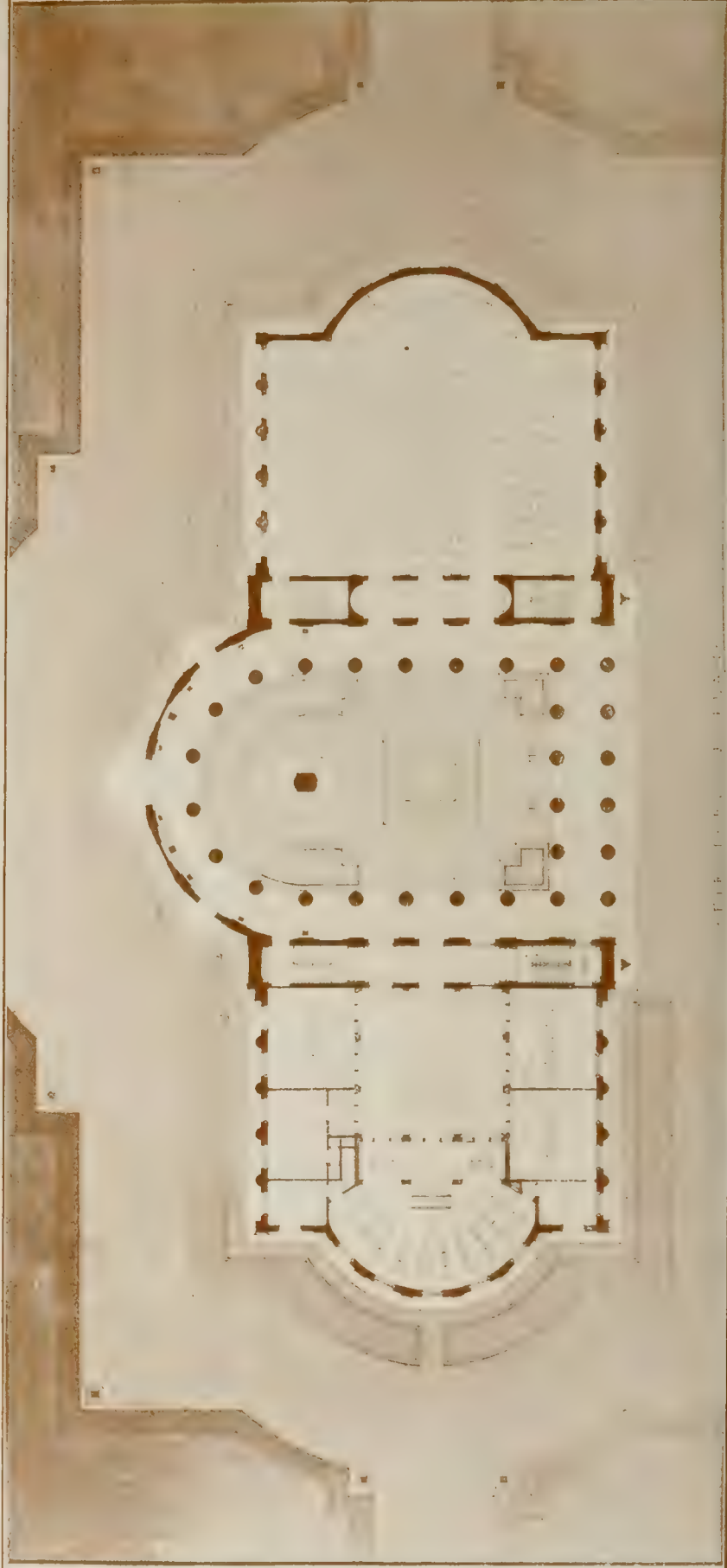
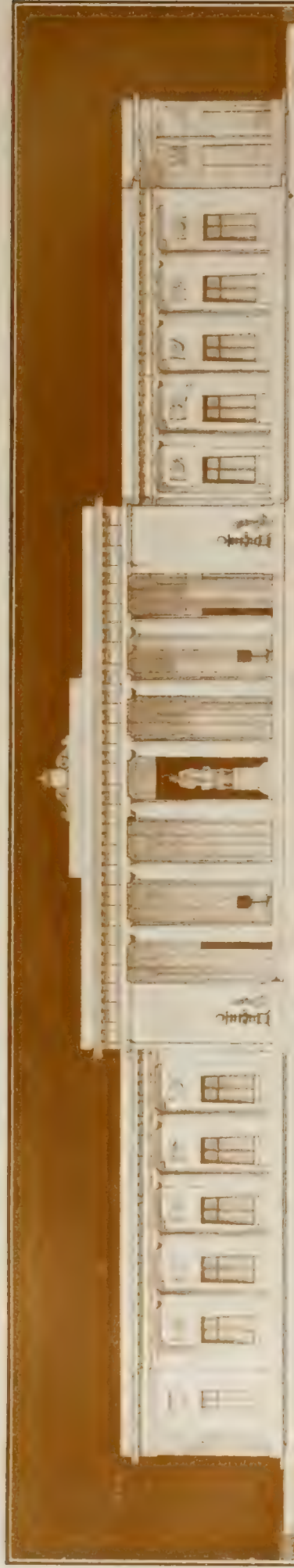


TWYFORD CHURCH, BUCKINGHAMSHIRE:
SOUTH DOORWAY.



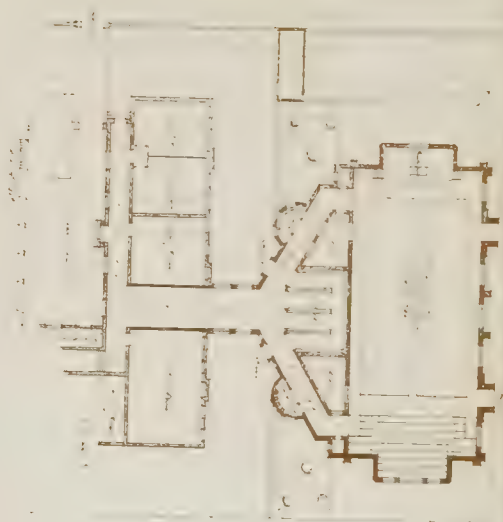
BRAYTON CHURCH, YORKSHIRE:
DETAIL OF SOUTH DOORWAY.



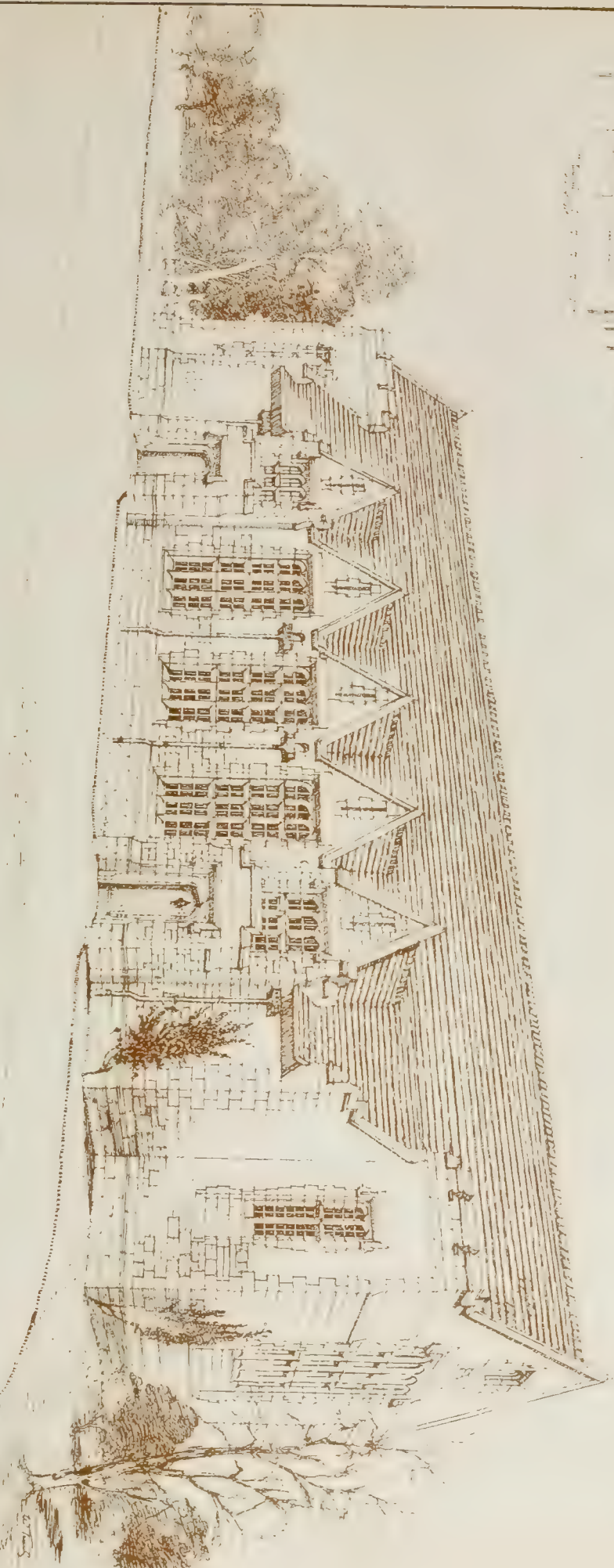


THE NATIONAL BIRTHPLACE MEMORIAL TO PRESIDENT MCKINLEY AT NILES, OHIO, U.S.A.: SELECTED DESIGN.

Messrs. McKIM, MEAD, and WHITE, Architects.



SELECTED DESIGN FOR
NEW ASSEMBLY HALL
RUTHERFORD COLLEGE
GIRLS SCHOOL, NEWCASTLE



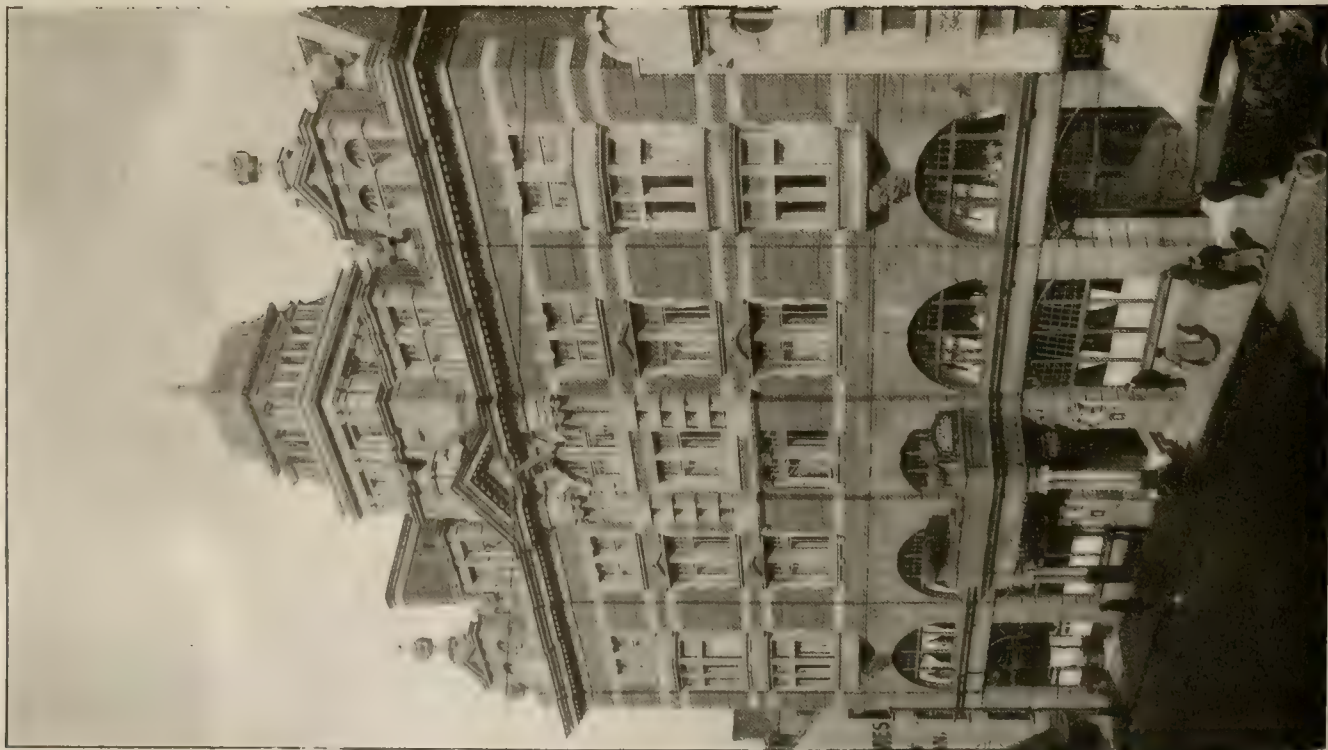
*Marshall & Tweedy
Architects
Newcastle-on-Tyne*

RUTHERFORD COLLEGE FOR GIRLS, NEWCASTLE-ON-TYNE: SELECTED DESIGN FOR THE ASSEMBLY HALL.

Messrs MARSHALL AND TWEEDY, Architects.







HOTEL CAMERON, SWANSEA.

Mr. CHARLES T. RUTHEN, Architect.



CARLTON CINEMA AND RESTAURANT, SWANSEA.

PLACED FIRST

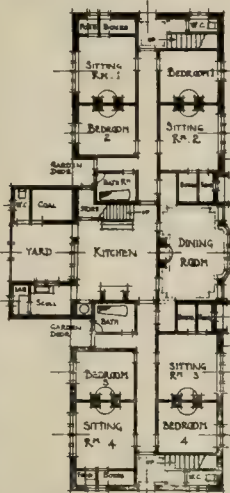


BUILDING NEWS DESIGNING CLUB
SUBJECT N° 5, FEBRUARY, 1915.

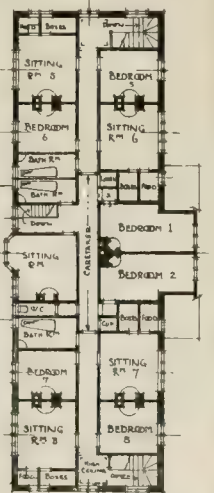
FRONT ELEVATION

VIEW FROM S. WEST

A CO-OPERATIVE HOSTEL • DESIGN
By "SEPTEMBER MORN"



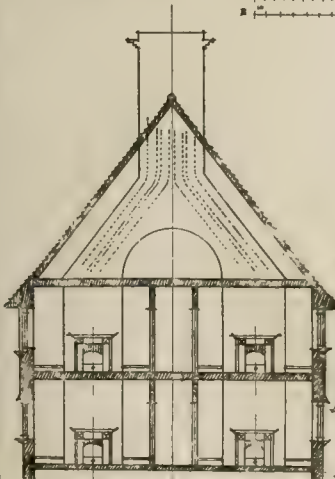
GROUND FLOOR PLAN



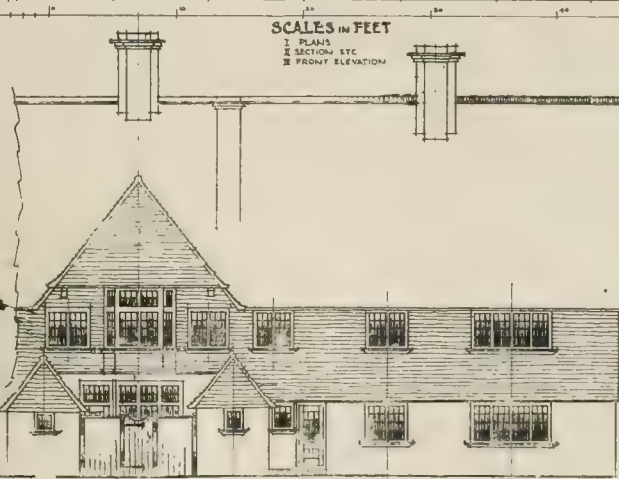
FIRST FLOOR PLAN

SCALE IN FEET

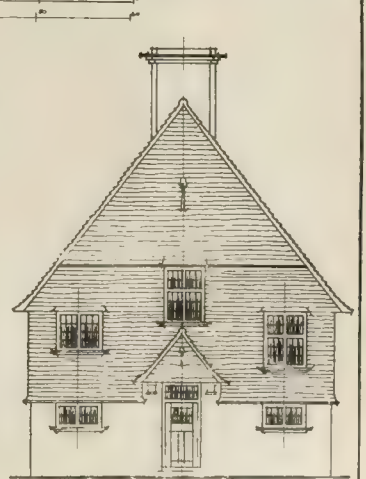
1 PLANS
2 SECTION ETC
3 FRONT ELEVATION



CROSS SECTION



BACK ELEVATION



END ELEVATION

"BUILDING NEWS" DESIGNING CLUB: A CO-OPERATIVE HOSTEL
FOR A GARDEN SUBURB.—Design by "SEPTEMBER MORN" (Placed First).

Corrente Calamo.

The practice of conveyancing, which means the working out of the wonderful Land Laws under which we still live, as we have done for centuries, is a system which, to men of business, seems more like magic or mysticism than common sense. It is full of pitfalls, which even the most skilful lawyers are often unable to avoid. There are, for instance, covenants that "run with the land," and others that do not. Even now it seems hard for the courts to decide which is which. Thus, in a recent case, there was a lease with a proviso that there should be no assignment or sub-letting of the premises. The lessee, with lessor's consent, after lawyer's fees paid, granted a sub-lease of the place. Then the sub-lessees assigned the sub-lease, and now the representatives of the original lessors claimed that this was sold as being contrary to the covenant in the original lease. The point for the Court was whether this old covenant in the lease applied to the sub-lease, or, in the quaint legal technical language, "ran with the land"—that is, somehow or other got attached to the land itself, and so applied to all subsequent leases of it. After a lot of learned argument, and the quoting of numerous ancient and modern authorities, the judge held that the original covenant did "run with the land," and so prevented any assignment of the sub-lease, which was therefore useless as a bit of saleable property. It is quite time that conveyancing was more simplified, and brought into line with the ordinary rules of business and common sense. A short statute could easily be passed nowadays which would clear away the existing jungle of conflicting cases, and place the law as to leases and property upon a plain and practical basis.

In our issue of December 5, 1913, we published a letter from Mr. Richard Fowler, F.S.I., 118, Colmore-row, Birmingham, criticising, as we thought reasonably and fairly, the operation of the East Birmingham Town-Planning Scheme, which Mr. John Burns, at a conference at Caxton House, Westminster, had on the previous November 25 held up as "a model"—of what, except unfair and injudicious treatment of the few developing landlords in East Birmingham, we failed utterly to see. Nor is it evident that the Corporation of Birmingham or the Local Government Board is going to act more fairly or judiciously as regards the South Birmingham Scheme, the Local Government Board inquiry into which was held at the Council House on Thursday in last week by Mr. Raymond Unwin, now an Inspector of the Local Government Board. If this application, as it stands, is approved by the L.G.B., it certainly seems to us that the development of the estate within the area practically passes immediately into the hands of a local Committee and the Local Government Board, and that once again restrictions will be enforced on one owner's land, while they are waived in the case of other owners where the reasons for enforcement were obvious. The result will be the discouragement of the building of good, cheap houses for the workers, the hindrance of private enterprise, and ultimate loss to the City of Birmingham itself. It is one of the most stupid mistakes imaginable to fancy that this is in any way a matter of party politics, or that landowners and their surveyors are averse to town planning. All they ask—and

that, it seems, they are entitled to under the Act—is to be consulted at every stage of a Scheme, and not to have schemes rushed over their heads. The surveyors in East Birmingham, after thrice making their appeals in writing to the L.G.B., as the law provides, were so exasperated at the Board's arbitrary final decisions that they went to the trouble and cost of sending an appeal to every member of both Houses of Parliament, explaining the circumstances, and attended in London and interviewed many members of both Houses, gaining much sympathy, but were told there was not time! The scheme was only placed on the table of the House at the end of the session, when other all-important questions were on, and so further opposition was impossible.

What the result was in East Birmingham is, unfortunately, too patent to any competent observer who will for himself view the Ward End Park-road, Lime Tree-road, and Nansen-road, Washwood Heath; or Pelham-road, Brook Hill, Sandbourne, Thornton, Thornwell, and other roads at Alum Rock. If he wishes to see the kind of houses town planning has stopped, let him inspect the Sandbourne, Sladefield, Barmville, Monk, St. Agatha's, and other roads at Alum Rock, when he will be astounded. A pride was taken in the last-named houses. In one case, a client bought extra land to make the plots fronting four roads average fifty yards deep instead of forty yards. At the time of the application for the East Birmingham Scheme hundreds of good workmen's houses were being built yearly within the area; on two estates four builders were erecting houses at the rate of 150 a year, and in ever-increasing quantities. All these houses had three bedrooms, often a bathroom and an airing closet upstairs, with hot and cold water, the plots averaging forty-five yards to fifty yards deep, and never less than an average width of five yards per house, including passages—rent 6s. 9d. a week—on valuable land at and adjoining Sattlely, the hub of the manufacturing portion of the city. We believe such accommodation at the rent is unequalled in Birmingham, and that it is not excelled as an unaided business proposition in any part of the country.

As it was in East Birmingham, so it will be in the district now about to be exploited, if the main blot on the Town-Planning Act—the absence of any appeal to an expert—is to favour the ignorance of local authorities. The Birmingham Committee seemed biased against the advice of surveyors, who collectively warned them in writing that the result of their proposals would be to stop the building of workmen's houses. Who will develop twelve houses to the acre? The usual calculation in Birmingham is that it takes the value of the site of eight of them to pay for the roads, which leaves the value of only four sites towards the original cost of all the land. The purchasers risk trouble, the financing of lawyers, land taxation, etc., etc., and when built the corporation immediately take the rents of four houses for the rates, the owner having the privilege of keeping all twelve in repair and of being denounced as a landgrabber! Mr. Lloyd George ignored all this in his Land Taxation of 1909, which has held up building all over the country; but in East Birmingham houses were so desperately wanted that they were built in spite of that Act. Thousands of houses are

still wanted. Rents went up at once in all directions, two families living in one house, with all the attendant evils. So it is going to be in South Birmingham if the pertinent objections urged by the leading Birmingham surveyors and others at last week's inquiry are once more ignored, as they seem likely to be.

We are not teetotallers ourselves; but we entirely agree with and endorse the appeal of the very influential deputation, representing all the great shipbuilding firms in the kingdom, which waited upon the Chancellor of the Exchequer on Monday and urged that the national requirements called for the total prohibition of the sale of excisable liquors during the period of the war. We believe the result would be such a lesson to the country that never again would the sale of drink be allowed under present conditions. For years past most of the increased wages given in our own trade has gone to the publican. We believe it is the same in other industries. No one who keeps his eyes open can deny that half the crime, five-sixths of the squalid poverty, and nearly all the preventable misery of this country, are due to the idiotic encouragement given by the present licensing regulations to the temptations held out to drink at all hours. The old "public-house" is practically obsolete; it has degenerated into a mere dram-shop. Instead of "refreshment," it deals out death and demoralisation; and, to-day, it is a more deadly and traitorous enemy to the country than any possible foreign foe. And—worse luck!—during the coming holidays, it will revel in all its opportunities as usual!

There is little to add to the verdict of the jury or the Coroner's remarks with regard to the fatal reinforced-concrete failure at Bury, which is reported in our legal intelligence elsewhere. The case is one of more importance than the general public suspect, in which responsibility is hard to fix on anybody. One of these days a catastrophe of more than usual magnitude will demand a scapegoat. We hope he will not be an architect who has neglected to verify the calculations of others, or trusted to systems of construction about which he knows little!

The Wesleyan Church at Boston, Lines, has been reopened after the rebuilding of the masonry western towers on a pile foundation, under the direction of Sir Francis Fox. The outlay has been about £3,000.

It has been decided that the construction of the new motor relief road between Thornton Heath and Purley, by which the narrow and congested main street through Croydon will be avoided, shall not be proceeded with until the war is over. The Road Board has, however, authorised the Croydon Corporation to acquire the necessary land and enter into agreements for the erection of new railway bridges at Epsom-road and Waddon Marsh.

The corporation of Norwich received at their last meeting a letter from H.M. Office of Works announcing that Norwich Castle has been included in the list of monuments the preservation of which is, in the opinion of the Ancient Monuments Act, of national importance. H.M. Commissioners of Works will hereafter be entitled to receive notice from the corporation of any proposal to demolish or remove, in whole or in part, structurally alter, or make additions to the monument, the corporation being also debarred from proceeding with any such proposal for a period of one month after having given such notice. The Lord Mayor moved that the report be received, and that the words "Norwich Castle" do not for the purposes of the Ancient Monuments Consolidation and Amendment Act, 1913, include the modern buildings at the Castle Museum. This resolution was unanimously agreed to.

PROFESSIONAL AND TRADE SOCIETIES.

THE GROUND BENEATH LONDON.—

A lecture on this subject was delivered on Thursday evening in last week at the Royal Institution by Mr. Aubrey Strahan, Director of the Geological Survey of Great Britain. London, he declared, was clearly living beyond its means as regards the water supply, and those large firms which had recently sunk artesian wells at a considerable expense for their own use had a legitimate grievance when they were heavily assessed for the water which was not supplied by the Metropolitan Water Board. Wells might, indeed, be sunk in many places, but the practice was attended with considerable danger owing to consequent shrinkage of the soil. The borings necessary for the tubes had caused justifiable alarm on the part of the Chapter of St. Paul's Cathedral. He had noticed that St. James's Church, in Piccadilly, was falling out of the perpendicular, probably from the same cause. Clay had a curious property attached to it: it shrank and expanded as it grew dry or moist, and in the process it crawled like a caterpillar—down hill if possible. A building in the Haymarket some thirty-eight years ago was built on a strip of London clay which behaved in this manner. One night an alarm was raised that it showed signs of giving way, but five minutes later not one stone of that building was left on the top of another.

GLASGOW ARCHÆOLOGICAL SOCIETY.—The monthly meeting of this society was held in Glasgow on Friday night, when a paper on "A Divot at Falkirk" was read by Councillor Dr. William Gemmell. He said that three years ago, when acting as interim Medical Officer of Health for Stirlingshire and Dumbartonshire, he saw on a moor near Falkirk a house of a curious structure. Examination showed that it had originally been built with large divots of turf and that the turf still remained on two of the walls, while the other two had been replaced at a later period by brick. The history of the house showed that it had been built by colliers, and was one of a type of which there were many on the moor. The colliers had been brought by the Duke of Hamilton to work his pits. As there was no accommodation for them, they were turned loose on the moor, and built their houses with divots, and roofed them with finer layers of turf. This was a type of house of which there were at least a hundred on the moor. In those primitive dwellings the colliers of one hundred years ago lived, and brought up healthy and respectable families, many members of which rose to eminence in the world. The paper was illustrated by lantern slides.

MUNICIPAL AND COUNTY ENGINEERS.—At the annual meeting of the council of the Institution of Municipal and County Engineers, held at 92, Victoria-street, Westminster, Mr. J. S. Pickering (president), in the chair, the report of the scrutineers of the ballot lists for the election of officers and council for the ensuing year was announced as follows:—President: Mr. H. T. Wakelam. Vice-presidents: Messrs. J. S. Brodie, T. W. A. Hayward, and P. H. Palmer. Honorary treasurer: Sir James Lemon. Ordinary Members of Council: Messrs. Chas. Brownridge, E. E. W. Butt, G. F. Carter, E. J. Elford, H. P. Foster, W. T. Lancashire, E. B. Martin, F. Massie, W. H. Prescott, Norman Scrogie, H. E. Stilgoe, and C. F. Wike.

THE ROMAN REMAINS AT WROXETER.—Mr. J. P. Bushe-Fox gave an account of the excavations made last year at the Roman House at Wroxeter before the Society of Antiquaries, Burlington House, W.C., on Thursday evening in last week. The lecturer showed by plans and slides the elaborate system of rooms, corridors, courtyards, and baths that constituted this important residence. So much reconstruction had taken place, however, that it was an intricate task to trace the plan of the building unobscured by the additions and alterations that converted it into a house of

the usual courtyard type, with a long verandah or corridor at the back. There were many valuable finds of Roman and British coins that helped to fix the date of different stages of the buildings, and gems, ornaments, and pottery of much beauty and interest, as well as mosaic pavements, were among the indications of the luxury and wealth enjoyed by the Roman residents.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—The Board of Architectural Education announce that the designs submitted by the following students who are qualifying for the final examination have been approved:—

SUBJECT XIX.

(A) A Memorial to Lord Roberts.

Arnold, R. C.	Harrison, H. St. J.	Munguia, G.
Brandon, C. J.	Hendry, H.	Riexa, F.
Bruce, J. C. C.	Hull, V.	Sanders, T. A.
Carey, R. W.	Hutton, L. D. H.	Spence, W. N.
Cottingham, G. R.	Jopling, A. B. B.	Stevens, F. J.
Day, N. F. O.	Knight, W. J.	Tubbs, G. P.
Duncan, R. A.	Lawson, J. Scott	Vonberg, W. C.
Evens, T. C.	Lyne, D. R.	Wood, A. G.
Foulkes, S. C.	Mitchell, C. H.	Woodhouse, F. P. M.
Graham, R. D.		

(B) A Garage for a Large Country Mansion.

Church, L. D. A.	Holden, W.	Roberts, E. W.
Dickinson, J.	Keep, N.	Sunter, M. O.
Doddington, W.	Mitchell, C. H.	Tanner, A. S.
Edwards, J. R.	Philp, A. T.	Vinden, G.
Gordon, P. J.	Pictou, C. S.	

Designs for other subjects, from the following candidates, have also been approved:—

Kellock, A. D.	Hemm, G.
Fisher, H. N.	Omar, I.

THE ROYAL TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMEN'S SOCIETY, GLASGOW.—The annual business meeting of the Glasgow Royal Technical College Architectural Craftsmen's Society was held on Friday, 26th inst., when the following gentlemen were elected office-bearers for 1915-16:—Honorary presidents: Mr. T. L. Watson, I.A., architect; Mr. Jas. M. Monro, F.R.I.B.A., I.A., architect; Mr. Chas. Gourlay, Esq., B.Sc., A.R.I.B.A., F.S.A. Scot., Professor of Architecture; Mr. Alex. Davidson, Licentiate R.I.B.A., architect. President: Mr. Robert Moon-Wright. Vice-presidents: Mr. Thomas Whyte, F.F.S., P.A.S.I., surveyor; Mr. Peter Lyall, builder. Joint secretaries: Mr. Donald Dewar, Associate F.S., surveyor; Mr. Malcolm D. McPhail, surveyor. Treasurer: Mr. Thomas Davis. Representative to College Committee on Architecture: Mr. W. H. Baxter-Wright.

The Local Government Board have sanctioned the application of the Sheffield Corporation for leave to borrow £24,680 for the erection of public baths at Hillsborough and Yncobank, washhouses at Daniel Hill, and a central laundry near Penistone-road.

Mr. A. E. White, the city engineer of Hull, having resigned, at a meeting on Friday of the works committee of the corporation, his assistant, Mr. F. W. Bucknell, was unanimously elected to succeed him. The salary was fixed at £750, with yearly increments of £50 until the maximum of £1,000 has been reached.

Among the Friday evening lectures to be given at the Royal Institution after Easter are those by Canon E. H. Pearce, Treasurer of Westminster, on "The Archives of Westminster Abbey," announced for May 14, and by Sir John Jackson, M.P., on "Engineering Problems of Mesopotamia and Euphrates Valley," to be delivered on May 28.

A Sydney firm of indentors is desirous of getting into touch with United Kingdom manufacturers of glass, chinaware, and builders' ironmongery wishing to extend their business to the Commonwealth. Communications regarding this inquiry should be addressed to the Official Secretary, Office of the High Commissioner for Australia, 72, Victoria-street, London, S.W.

The foundation-stone of the new market buildings and town-hall for Denbigh was laid by the mayor of that town on Friday. Mr. Elcock is the architect, and Mr. Morton Browne the contractor. The cost will be about £12,000.

The Bishop of Manchester on Sunday performed the reopening and dedication of the restored church of St. Peter, Leek, near Kirkby Lonsdale and Cowan Bridge, a village associated with the early history of the Brontë sisters. The former structure was destroyed by fire in October, 1913.

LEGAL INTELLIGENCE.

COLLAPSE OF A REINFORCED CONCRETE BUILDING AT BURY.

—The adjourned inquest by Mr. T. F. Butcher and a jury was held at Bury last Friday on the bodies of the men who met their death by the fall of a building in the course of erection for Messrs. J. Wrigley and Son, paper manufacturers, Bridge Hall Mills, Bury, in February. —The Coroner, addressing the jury, said he thought they would agree with him that the evidence had been given, generally speaking, in a straightforward way. There was one witness who, above all others, had been perfectly straightforward; he meant Durham. He admired the way in which Durham gave his evidence. On the question of criminal negligence their duty had been made more simple by the fact that there was substantial agreement between all the men who had been called before them who could be at all characterised as experts—he meant between Mr. Thomas, Mr. Hudson, and Mr. Murphy. They all said that this collapse was due, or at all events principally due, to the faulty design of the east side roof-trusses. Such design was clearly a matter of negligence, and ought never to have been made. Two important points for them to deal with were, first, whose negligence it was, and secondly what was the degree of negligence. On the first part of the question, as to whose negligence it was, he thought it was clear it was not the negligence of Messrs. Wrigley. On March 6 they wrote a letter to Mr. Greenwood, stating what they required, and asking for the calculations to be checked, and to be favoured with a guarantee. The reply to that letter stated that Messrs. Wrigley need have no fear of the stability of the building, and giving a guarantee. On the other hand, the questions which the jury had passed up to him on the day previous through their foreman were not questions in which Messrs. Wrigley were uninterested. The questions which they put were:—Re the non-submission of the plans to the authority: (a) Is the contractor responsible? (b) Or are the proprietors? (c) or are both? That was the first question. Mr. Hudson cleared that up, as far as it had been cleared up in the course of the inquiry, when he said he desired his principals to submit their plans to the authority, and his principals replied: "We never have submitted any plans." The jury's second question was, Who were the local authorities? That was the Corporation of Bury. Their third question was, Had they a building inspector? Officially he had no knowledge of that; but his pocket-book told him they had a building inspector. The fourth question was, Was it the duty of such building inspector to stop any building until the official plans had been passed? Regarding the question of plans, it was clear that despite the representations said by Mr. Hudson to have been made to his principals—of the making of which representations, although they were sworn to, he had very serious doubts—he was inclined to think that it was an afterthought on the part of Mr. Hudson, seeing that he said nothing to Messrs. Wrigley about them, and it appeared to him very unlikely that these representations were then made, because it was impossible to submit plans to the local authority at that time. He (the Coroner) was only a layman; but it did seem to him a somewhat startling thing that that which was the root of the success of the whole thing, the roof, was never dealt with until the other part of the building, generally speaking, had been completed. One would have thought it would have been a good thing, although it would not have relieved the onus of responsibility, had Mr. Arnot, who was anxious, or had Messrs. Greenwood, were were responsible, seen that the plans were submitted to the local authority. Though the local authority required nothing more than that their by-laws should be complied with, it would have been at least helpful to have had the criticism of the local authority, and it might possibly—he did not say it would—have prevented the plans being gone on with in the way they were. He was bound to advise them that he did not think any jury at assize would convict Mr. Hudson, who was responsible for Messrs. Greenwood, for neglect in this instance, seeing that it was the design which was the cause of the failure. At the same time, he could not help feeling that Mr. Hudson had been the least satisfactory witness they had had before them. According to his own story he had displayed a wonderful capacity for shirking his responsibility. It seemed strange that Mr. Hudson had taken no care beyond accepting the assurance of Mr. Murphy as to the stability of the roof, and had overlooked such minor matters as the segmentary nature of the gable-end wall and the proper dimensions of the ridge of the roof. These were comments which he thought ought to be made upon Mr. Hudson's evidence. He thought he was free of criminal responsibility, by reason of the undertaking of the Rigid Com-

pany; but, as he said earlier on, he was the least satisfactory witness who had been before them. Then on the question as to the person who, if any, had been guilty of criminal negligence, that was the groundwork of the whole thing. Mr. Murphy was the only person upon whom that responsibility could be fixed, if it could be fixed upon anyone. He was sure that Mr. Murphy's evidence would receive their sympathetic consideration; but their sympathy would not cause them to forget that a person having or claiming skill in designing a building must use reasonable care to secure that persons employed in the construction, or afterwards in the occupation, should not be in peril of their lives. Any monetary payment due as compensation to the relatives of the deceased men could not be sufficient recompense for the loss of life. It was their serious duty to decide whether Mr. Murphy had been guilty of such negligence. He left it to them to consider whether these men's deaths resulted from misadventure or through criminal negligence. The jury returned their verdict in the following terms:—"The cause of the deaths of these men is the collapse of the building through faulty design. The jury wish to express their deep sympathy with the relatives of the unfortunate victims, and also with those who have suffered injury. The accident is the result of grave errors made in the design of the roof, as admitted by the designer, Mr. Murphy; but the jury do not hold him guilty of criminal negligence. The jury is of opinion that the contractors should have submitted the plans to an expert before giving a guarantee. It is regretted that the plans were not submitted to the Corporation of Bury. The jury consider the supervision of Mr. Hudson to be lax, and he is deserving of censure, although he was pressed by Mr. Arnot."—The Coroner entered a verdict that whilst the men were engaged in the erection of a machine-house the building collapsed through misadventure and fell upon them, inflicting mortal injuries from which they died, and said he would annex the jury's observations to the verdict. He did not think he need add anything to what the jury had said about censuring Mr. Hudson.

OVERHEAD TELEPHONE WIRES AT LEYTON.—The point in dispute between the Postmaster-General and the Leyton Urban District Council in regard to the erection of poles for overhead telephone-wires, referred to in our last issue, was decided by Judge Smyly at Bow County-court on Tuesday. The Postmaster-General desired to have placed at various points on the public way ten poles for the purpose of carrying telephone-wires; but the council contended that the wires should be conveyed underground on the conduit system. They also alleged that the erection of poles at the points suggested would lead to a nuisance. It was pointed out that it would cost £70 more to adopt the underground system as compared with the overhead, and that if the council succeeded in their opposition the Government would be put to great expense throughout the district. Judge Smyly ruled that he must follow the decision given by the Railway Commissioners in the Croydon case and make an award in favour of the Postmaster-General; but the award would be in the form that it would be subject to the condition that the poles should be placed as near the kerb as the safety of the traffic would permit.

MANCHESTER HOUSING APPEAL.—Hay v. Lord Mayor and Corporation of Manchester. —Lords Loreburn, Atkinson, and Parker of Waddington, sitting as the House of Lords, reserved judgment on Monday in the appeal of Mr. Sam Hay, the owner of three small cottages in Dorrington-street and Vine-street, Manchester, against an order of the Court of Appeal reversing a judgment of Vice-Chancellor Stewart Smith, K.C., in which an injunction was granted restraining the corporation of Manchester from affixing on the buildings in question notices declaring them unfit for human habitation.

A ST. PAUL'S BRIDGE ARBITRATION.—At the Surveyors' Institution, on Thursday and Friday in last week, Mr. F. G. Chinnock sat as arbitrator in a case in which Messrs. Lever Bros., Ltd., of Port Sunlight, Cheshire, made a claim for £180,000 from the Corporation of London, in respect of the acquisition of their leasehold interest in property known as Sunlight Wharf, George-yard, Upper Thames-street, E.C., under the Corporation of London (Bridges) Act, 1911, for the purposes of building the new St. Paul's Bridge over the Thames. There was a further claim of £50,000 for disturbance, making a total of £230,000. After a conference on Friday between counsel as to the area to be taken by the Corporation, it was stated that the parties had arrived at a conclusion which would necessitate the heads being drawn up and submitted to the arbitrator, with a view to their being

embodied in his award. The following settlement has since been made: Messrs. Lever Bros. remain in permanent possession of that portion of the land first built upon by them. Of the remainder they are to remain in possession until the contractors for the bridge works shall give them three months' notice. Upon the completion of the bridge works, the Corporation undertakes to grant a lease for 80 years of the first-mentioned land, together with a certain portion of the last-mentioned, and a space under three arches of the new bridge at a rent of £1,943. The claimants will erect on the new land to be leased a building similar to the existing buildings to a specified height, and the Corporation will pay the cost of the buildings up to £40,000. The new buildings are to have a frontage on the new bridge road, any ornamentation required by the Corporation to be executed at their expense. The Corporation has also agreed to pay Messrs. Lever Bros. £47,500 for the disturbance to their business.

The new Windle-Pilkington Council School at St. Helens, Lancs, built from the designs of Mr. W. B. Fletcher, was opened on Saturday.

A new church has been opened at Blackmill, near Llandyffodwg. The architect was Mr. Morris Williams, of Blackmill, and the contractor Mr. W. J. Cearn, of London.

The foundation-stone of a new church-room in Norton Way North, Letchworth, has been formally laid. The room is part of a scheme which includes a church and schools, to cost £13,000.

Mr. Colin Fish, surveyor, Doncaster, has been granted a commission in the 1st Field Company West Riding Division Royal Engineers. He is secretary of the Doncaster St. John Ambulance and Red Cross Society.

An exhibition of the work of the Serbian sculptor Ivan Meshtrovitch will be held in the Victoria and Albert Museum during the summer, by arrangement with the Serbian Government.

Plans submitted by Messrs. John Brown and Co., Ltd., shipbuilders, Clydebank, for twenty cottages on ground east and west of Cochno-street, Whitecreek, have been approved by the Clydebank Dean of Guild Court. Mr. J. Taylor, Dock-street, Clydebank, is the builder, and the cost is estimated at £7,000.

The new bridge over the Lea, which has been erected by the Essex County Council and the Walthamstow Urban District Council to replace the old Ferrybridge, was opened for traffic on Monday. It was at this point that during the Plague of London citizens who were fleeing from the capital were prevented for some time from crossing into Walthamstow. The people were eventually allowed to enter Epping Forest.

The Bishop of Bristol dedicated on Saturday evening, at a special service at St. Bartholomew's Church, Bristol, the memorial stained-glass window to the late Mr. William Cottrell, for many years a warden of the church. The window is situated on the south side of the church, and consists of three main lights with tracery above; the subjects are St. Peter, St. Bartholomew, and St. Paul. Messrs. Joseph Bell and Son, of College Green, Bristol, were the artists.

Works of repair and restoration have just been carried out in the parish church of Broadwoodkelly, North Devon. The roof and walls have been strengthened, and the reredos has been relieved of its whitewash and red and gold paint, the stone carving of the Crucifixion appearing in its pristine simplicity. The side-chapel (turned into a vestry) has been restored, and the Jacobean altar is placed there, a larger oak altar being erected in the chancel. The organ, formerly in the cloisters of Westminster Abbey, has been re-erected, having been in an almost ruinous condition, and ancient leaded glass and tiles have been recovered and replaced.

Notwithstanding the war, the various port-improvement schemes planned by the Australian State and Federal Governments are being carried out in accordance with the recommendations of the Dominion's Royal Commission. Altogether, the estimated expenditure is not far short of fifteen millions sterling. For nearly a year now work has been in progress at Fremantle (where the construction of an inner harbour has just been approved by the authorities), Adelaide, Melbourne, Hobart, Brisbane, and Sydney. The Commissioners of the last-named port have sanctioned another scheme which, when completed, will provide room for the berthing of 54 deep-sea vessels of the largest size, 31 inter-State, and 42 coastal steamers, the aggregate length of the new wharves being about twelve miles.

Our Office Table.

The King and Queen and Queen Alexandra are giving their patronage to a grand concert to be held in the Albert Hall on Saturday, April 24, at 3 o'clock. The proceeds will be divided between the fund for recruiting bands and the Professional Classes War Relief Council, which is working in a variety of ways to alleviate distress in a class which cannot be assisted through ordinary charitable societies or through the Prince of Wales' Fund. The features of the concert will be the performance by the Royal Choral Society of compositions by Sir Hubert Parry and Sir Frederick Bridge, conducted by the composers. There will also be performances of the massed recruiting bands, conducted by Captain Mackenzie Rogan, M.V.O., with 400 performers, and other attractions to be announced later. Tickets (at the usual rates) should be applied for early at the hall, or at 13, Prince's Gate, the offices of the Professional Classes War Relief Council.

Major Leonard Darwin, chairman of the Professional Classes War Relief Council, appeals to those whose financial position is not too seriously affected by the war to consider if it would not be possible for them now to arrange for the execution either of portraits of the members of their families or of decorative work in their houses. An exhibition of paintings and sculpture is being organised by the "Arts in Wartime" Committee of the Council, which will be opened on Tuesday week, the 13th inst., at the City Guildhall. In addition to the work of artists who have suffered by the war, paintings by artists more fortunately placed, which have been presented to the Council to be sold for the benefit of distressed artists, will also be included.

The annual report of the committee of University College, London, has been presented to the Senate. It shows that whereas in the session 1913-14 there were 2,206 students, in the current session there has been a falling off in the total number of 335, involving a decrease in fees of at least £10,000. A large number of public lectures in connection with the war has been organised, dealing with various historical and legal matters, and also with the actual effect of the war upon the occupied territories in Belgium and France. These courses include six Carpenters' Company lectures on "The Architecture of Belgian Towns," three of which have been given by Belgian architects, Messrs. Caluwaerts, Horta, and Portielje; they include also a course of six lectures delivered by Professor L. Van der Essen, of Louvain on "Louvain and its University," the proceeds of which, amounting to £65, were devoted to the assistance of refugees from Louvain. The new building for the School of Architecture, designed by Professor F. M. Simpson, F.R.I.B.A., was completed in the course of the session 1913-14. The staff at the school has been further strengthened by the institution of a Chair of Town-planning, to which Professor S. D. Adsead has been appointed. A summer school of town-planning was held in the new building. The completion of the other new buildings has been delayed by the war. A special effort on the part of the equipment and endowment fund committee is to be made to raise the remainder of the sum necessary for the completion of the chemical laboratories. The sum still needed for this purpose is £13,650, the greater part of which (£10,000) is required for the special equipment of a physical and electrical chemistry laboratory. Arrangements are being made for holding in the School of Architecture an Exhibition of Belgian Towns, which is being organised by the Town-planning Institute, and for the accommodation in the drawing office of the school of a number of selected Belgian architects who are prepared to work upon the re-planning of the towns of Belgium.

We regret to learn that the Georgian Society of Dublin, which was founded in 1907 by Dr. MacDowell Cosgrave and a few

friends, has been dissolved. Five volumes of Transactions have been published, and after paying all expenses a substantial balance has been handed over to the Dublin Castle Red Cross Hospital. The blocks have been destroyed, so that the volumes cannot be re-issued. The society has, out of the surplus at its disposal, had all the original photographs suitably mounted, and they have been presented to the Dublin Science and Art Museum, the director of which has assumed responsibility for their custody. There they will at all times be available to students and others who may not possess the volumes. The negatives from which the photographs were made have been handed over to the Architectural Association of Ireland, where they will be available for the purpose of making lantern-slides.

The Local Government Board have just issued a further circular to local authorities stating that by the decision of the Treasury to restrict the inception of new work not necessitated by reasons of public health or by war requirements will be construed in a strict sense. Before any application is made to the Board with a view to the immediate execution of works, local authorities should fully satisfy themselves that they can show that the expenditure cannot be avoided, postponed, or reduced. The Local Government Board add: "The Treasury are anxious that the attention of local authorities should be particularly drawn to the fact that economies and restrictions on borrowing are possible not only as regards new works, but also as regards works in progress. As regards these latter it will frequently be found possible by arrangement with contractors or otherwise to postpone works or parts of them, or to enlarge the period allowed under contract for their completion."

The Stafford Board of Guardians considered at their last meeting a letter received from the Local Government Board authorising them to purchase a site for the proposed cottage homes, but expressing regret that they were now unable to sanction expenditure or a loan in connection with the scheme at the present time. The clerk, Mr. Wilton, said that in a letter dated November 23 the Local Government Board wrote that in deference to the wishes of the guardians they would not refuse to sanction the scheme submitted, but before giving their formal approval they desired to be furnished with an estimate of the cost of the work. A tender amounting to £2,508 was accepted from Mr. H. J. Clay, but a few weeks ago Mr. Duff, the Local Government Board inspector, informed him (Mr. Wilton) that on account of the war the Board would not allow them to proceed with the work. He (the clerk) pointed out that the guardians had accepted a tender for the work, and that the contractor had placed all his orders for materials, the bulk of which had been carted on to the site. In the course of discussion it was pointed out that the contract had not been signed, and that no capital expenditure was required for the purchase of the site. A member remarked that the Local Government Board seemed to have acted in a very unbusinesslike manner. Several members expressed sympathy with the contractor, and it was decided that the chairman and the clerk, with the borough member (Sir Walter Essex), should interview the Local Government Board upon the matter.

Boxwood is obtained in small quantity only from the United Kingdom, and for many years past our supplies of true boxwood have been drawn from the countries bordering the Black and Caspian Seas. Several substitutes for true boxwood have, however, been introduced, and one of these, the Knysna boxwood (gonioma Kamassi), has been exported in considerable quantities from South Africa. A species of true Buxus (Buxus Macowani) is also found in South Africa, and samples recently examined at the Imperial Institute were found to be very similar in character and working qualities to true boxwood. Technical tests were also made by several firms utilising boxwood for various purposes, and the general opinion,

including that of leading wood-brokers, was favourable. The Imperial Institute has accordingly suggested to the Union of South Africa Government that it would be well to place a trial shipment of this South African boxwood on the London market.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY (APRIL 10).—Institution of Municipal and County Engineers. East Midland District Meeting, Town Hall, Loughborough, 2.15 p.m.

Telephone DALSTON 1388.

OGILVIE & CO.
Many years connected with the late firm of W. H. LASCELLES & CO., of Bunhill Row.
Mildmay Avenue, ISLINGTON, N.
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TENDERS.

* Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

AUDLEY, STAFFS.—For providing a 15-ton weigh-bridge at the gasworks, for the urban district council:—

Pooley and Sons, Ltd. (accepted) £115 0 0

BRIDGWATER.—For erection of a temporary hospital at the dock, Bridgwater, for the town council:—

Stockham and Sons, Bridgwater £220 0 0

Palmer, S., Bridgwater ... 199 2 6

Bryer, C., jun., & Co., Bridgwater* 193 0 0

* Accepted.

CHARING, EAST KENT.—For alterations to Rowton House, Charing, to convert it into children's home, for the Ashford Board of Guardians:—

Bowles, E. J., Ashford ... £500 0 0

Sanders and Co., Canterbury ... 466 19 10

Goddard, D., and Sons, Hamstreet ... 436 0 0

Howland, S. H., Ashford ... 461 10 0

Shippam, W., Ashford ... 422 0 0

Kuoch, H., Ashford ... 417 10 0

Gwynnett, T. S., Ashford* ... 375 0 0

* Accepted.

CULTS.—For the erection of a parish church. Messrs. A. Marshall Mackenzie and Sons, Union-street, Aberdeen, architects:—

Anderson, A., mason.

Burnett and Low, carpenters.

Calder, A., Cults, slater.

Copland, E., painter.

Roger and Baxter, plasterers.

Smith, T. C., and Co., electric lighting.

(Total amount of tenders, £4,500.)

(Rest of Aberdeen.)

DARTON.—For supply of 5in. pipes, for the urban district council:—

Cochrane, Middlesbrough ... £371 8 9

(Accepted.)

EASTNEY.—For water-supply works, for the Eastney Rural District Council:—

Bond, T. V. (accepted) ... £250 0 0

HOLDERNESSE, HULL.—For the construction of a ferro-concrete service tank and water tower in the parish of Rimsell. Holderness, to hold about 300,000 and 100,000 gallons respectively, for the Hull Water and Gas Department. Mr. C. B. Newton, M.I.C.E., water and gas engineer:—

Goates, T., and Son, Brunswick-

avenue, Hull (accepted) ... £3,173 0 0

LITTLE THURBOCK.—For the erection of a new military pavilion at the hospital, for the Orsett Joint Hospital Board. Mr. C. M. Shiner, architect. Quantities by Mr. G. Sylvester, 7, Adam-street, Adelphi, W.C.:—

Harrison ... £2,080 0 0

Gearus ... 1,898 15 0

Carter, Ltd. ... 1,777 0 0

Clark ... 1,688 0 0

Holison and Co. ... 1,650 0 0

Brown Bros. ... 1,592 0 0

Walsham, W. ... 1,580 0 0

Brown, G., Grays (accepted) ... 1,475 0 0

MIDDLETON.—For the surfacing of the carriageway in Mill Ford-road with tar-macadam, and for the asphalt and flagging of the footpaths, for the corporation. Mr. W. Welburn, surveyor:—

Partington, R., and Son, Lodgell.

Middleton ... £912 15 0

Worthington, W. H. and Sons,

Manchester ... 869 3 6

Shepherd, W., and Son, Milk-

stone, Rochdale (accepted) ... 768 0 0

MANCHESTER.—For the construction of a dry dock 450ft. by 65ft at Manchester, for the Manchester Dry Docks Co., Ltd.:—

McAlpine, R., and Sons, Glasgow (accepted).

LONDON COUNTY COUNCIL.—Accepted tenders for one year, for the asylums committee of the London County Council:—

Iron, brass, &c.—Items 3, 4, 5, 7, 12, 13, 14, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, and 38. All

asylums:—

Hatton, C., and Co. ... £314 11 5

Painters' Materials, &c.—Items 1, 2, 5, 6, 7, 18, 21 and

23. All asylums:—

Yorkshire Varnish Co., Ltd. ... 65 8 9

Items 4, 25, 26, and 27. All asylums:—

Craig and Rose, Ltd. ... 52 2 2

Items 3, 10, 12, 14, 15, 17, 19, 20, 24, and 28. All

asylums:—

Farmiloe, T., and W., Ltd. ... 100 10 6

White lead. All asylums:—

Farmiloe, T., and W., Ltd. ... 815 16 3

Varnishes—Item 3a. All asylums:—

Yorkshire Varnish Co., Ltd. ... 54 5 0

All items except 3a. All asylums:—

Gross, Sherwood, & Heald, Ltd. ... 207 5 9

Builders' materials—Items 5, 12, 13, 15, 16, 20, 21, 24,

25, 26, 27, 59, 63, 64, 66, 69, 72, 73, 74, 75, 81, 83, 85, 87, 88

to 113, 114, and 117. Banstead:—

Whiteway, W., and Co. ... 233 7 9

Items 7, 12, 14, 20, 21, 25, 26, 59, 60, 64, 71, 72, 73, 74, 115,

117, and 119. Bexley:—

Whiteway, W., and Co. ... 427 13 4

Items 5, 13, 30 to 55, 76, and 131. Bexley:—

Knowles, J., & Co., (London), Ltd. ... 100 16 10

Items 5, 10, 13, 20, 24, 30 to 55, 70, 72, 73, 75, 81, 83, and

88 to 113. Cane Hill:—

Copper, W. J. ... 142 7 0

Items 2, 20, 21, 26, 64, 72, 74, 81. Claybury:—

Whiteway, W., and Co. ... 93 10 7

Items 18, 19, 20, 21, 70, 75, 85, 88 to 113. Colney Hatch:—

Young and Son ... 694 6 2

Items 11, 12, 13, 24, 59, 73, 114. Colney Hatch:—

Turner, J. H., and Lisney, Ltd. ... 238 0 4

Items 4, 60, 64, 65, and 81. Colney Hatch:—

Eames, A. ... 95 19 2

Items 30 to 55, 67, 68, 72, 79, 120, and 125. Colney

Hatch:—

Brooks, H. F. ... 243 17 5

Items 10, 20, 26, 27, 28, 30 to 55, 60, 70, 73, 74, 81, 88 to

113. Hanwell:—

Knowles, J., and Co. (London) ... 201 9 11

Items 1, 2, 5, 10, 12, 29, 63, 72, 73, 82, 83. Horton Estate

Asylums:—

Longhurst, E., and Sons ... 107 18 9

Items 3, 8, 20 to 25, 30 to 55, 60 to 65, 70, 78 to 80, 85, 87,

88 to 113, 115 to 118. Horton Estate Asylums:—

Whiteway, W., and Co. ... 555 10 0

NEW MILLS.—For supply, delivery and erection at

their gasworks, New Mills, of a two-lift spiral-guided

(Gadd and Mason) gasholder in a steel tank, 82ft. by

25ft. deep, for the New Mills Urban District

Council:—

Dempster, R. and J., Ltd., Oldham-road, Manchester

(accepted.)

PORTH, GLAM.—For forming hockey ground and

basket-ball court, for Glamorgan County Council.

Mr. D. Pugh-Jones, F.S.I., M.A., County Hall,

Cardiff, county architect. Quantities by the county

architect:—

Julian, A. W., Pontypridd, Glam. ... £933 11 7

(Accepted.)

PORTRCAWL.—For erection of infants' school and

combined domestic science building, for Glamorgan

County Council. Mr. D. Pugh-Jones, F.S.I.,

County Hall, Cardiff, county architect. Quantities

by the county architect:—

Jones, R., Caerphilly, Glam. ... £2,974 0 0

(Accepted.)

SWANSEA.—For supply of approximately 4,000 tons

of granite and ditto 2,900 tons of syenite macadam.

for the corporation. Accepted tenders:—

Granite Macadam:—

Pennmaenmawr and Welsh Granite Co.

Syenite Macadam:—

United Stone Firms, Ltd., Bristol.

WALTHAM ABBEY.—For the provision of the welded

tubes required for new steel rising mains at Waltham

Abbey, for the Metropolitan Water Board:—

Stewarts and Lloyds, Ltd. ... £640 0 0

Russell, J., and Sons, Ltd. ... £26 16 4

Piggott, T., & Co., Ltd. (accepted) ... 556 0 0

WARMLEY.—For painting at the isolation hospital,

for the rural district council:—

Powell, S., Kingswood (accepted) ... £119 16 6

WELLINGTON, SALOP.—For improvements and

alterations at Wrekin-road Council School, for the

Salop Education Committee:—

Roper, A. (accepted) ... £490 0 0

WELLINGTON, SALOP.—For rebuilding about

1,002ft. of boundary wall at the New Hall, for the

Salop Education Committee:—

Roper, A. (accepted) ... £53 0 0

WHITCHURCH.—For the erection of infants' school

(256 places), for the Glamorgan County Council. Mr.

D. Pugh-Jones, F.S.I., County Hall, Cardiff,

county architect. Quantities by the county archi-

tect:—

Watts and Gale, 64, Africa-

gardens, Cardiff (accepted) ... £2,890 0 0

WORKING.—For the provision of an improved puri-

fication system at the sewage farm, for the urban

district council:—

Hardy & Co., Woking (accepted) £17,721 0 0

WOLVERHAMPTON.—For supply of vestibules and

staircases for 18 cars, for the Tramway Committee:—

United Electric Car Co., Ltd. ... £818 0 0

(Accepted.)

WOODSTOW.—For fencing at the cemetery, for the

cemetery board:—

Bridgfoot and Sons (accepted) ... £222 10 0

WREXHAM.—For erection of the first section of the

new schools for girls, for the Governors of Wrexham

County Schools:—

Clark, E. (accepted) ... £5,887 0 0

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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Strand, W.C.

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OUR ILLUSTRATIONS.

The Towers and Spires of Oxford, viewed from the roof of the Sheldonian Theatre. Reproduced from an oil-colour sketch made on the spot by Mr. Ernest A. S. Benney, A.R.C.A.

"Curad." Goring-on-Thames, for the Earl of Shrewsbury and Talbot, K.C.V.O. View of Garden Front, the Entrance Lodge, the Boat House, and Yard Gates. Mr. W. T. Walker, F.R.I.B.A., Architect.

House, Titlark's Hill, Sunningdale. Entrance front and plans, with sections. Messrs. Tubbs, Messer, and Poulter, Architects.

Tilbury Urban District Council Housing Scheme. Views of three classes of buildings, and plans of each kind of house. Messrs. Pepler and Allen, Architects.

Drill-Hall at Totnes for the Territorial Force Assoc. of the County of Devon. Messrs. Ellis, Son, and Bowden, F.S.I., Architects, Exeter.

Photograph of Mr. Henry C. Walker.

BALANCE IN DESIGN.

Equal disposition of mass about a centre or axis is due to a law having its origin in the demands of equilibrium. In architecture the rule applies rigidly to free-standing parts and components, such as columns. It cannot always, and need never, of necessity, apply to a whole composition. No doubt a peculiar dignity, not obtainable otherwise, attends the exactly-balanced façade in monumental buildings; but site, circumstances, and practical conditions often make it an impossibility for the designer to proceed on centre-and-wings principle. We have, then, to design irregular building masses with grace and beauty. Irregular architectural composition favours variation and novelty: that which at first sight seems an evil need not necessarily prove so. Looking back into architectural history, we see that irregular plans are by no means inconsistent with grandeur of effect. The departure from exact balance in Gothic buildings gave them one of their greatest charms.

In all great styles the rule of exact symmetry in the part is closely followed. This assertion may seem inconsistent with fact, and would be so did we not here include all components that are wanting in exact equal-sidedness by reason of their breaking into other masses. Where a square plan breaks into a circular, the square and the circle are broken; but the spirit and intention in the square and in the circular plan is exact symmetry. When, therefore, we assert that in all great architectural styles the law of equal disposition of mass about a centre or plane is duly honoured, we include, for the reason stated, symmetrical components breaking into others. It is possible that those of expansive views, but small practical experience in architectural design, would regard part breaking into part, and leaving an irregular junction, as fatal to all beauty of effect. The architect will contend that such irregular junction, whereby something on asymmetric principles is produced by the union of two symmetrical objects, is not only without offence, but may originate great beauty and interest, and is quite an essential in the "picturesque." If we generally agree upon this, then something is gained of practical usefulness to the asymmetrical planner, and to all whose minds are greatly exercised with questions of "balance" whenever they are compelled to abandon the principle of centre-and-wings.

The stair-turret and the tower are largely evidenced in our old village churches. We have shown that both the turret and the tower are planned, in spirit, as objects of geometrical regularity and exact symmetry (so called). As carried

out, an irregular, unbalanced mass is produced. To destroy symmetrical orderliness by breaking the one into the other seems, at first, a crude idea, likely to cause offence; but we have urged, and taken for granted the concurrence of the reader in our view, that no such offence is produced, but that, on the contrary, a resultant architectural mass of true beauty and interest is obtained.

Under certain conditions, an element or compound will crystallise in true "symmetry" as a cubical figure, a tetrahedron, or the like. Under other conditions the crystals cluster. The free-born, regular, isolated crystal is an object of beauty; but no less beautiful or interesting is the group of associated crystals. Yet here, as with our turret and tower, and as in the case of all irregular junctions of divergent masses in building, broken and diverse—asymmetric—forms are produced; but so much of each crystal as exhibits itself is true to the crystal form, true to angle of crystallisation, and possessed of symmetry. On the face of things, one might conclude that the irregular massing of crystals would destroy their beauty. All who carefully ponder this matter will admit, we think, that the resultant forms, lines, outlines, and masses are beautiful, often very beautiful indeed, and highly suggestive for the picturesque grouping of masses of building on the asymmetric system—that is, opposed to the centre-and-wings arrangement. We should consider this natural phenomenon, and endeavour to establish some general proposition respecting the breaking-in of part to part in architectural composition. On elevation, such masses may appear at times "lopsided"; but this effect of out-of-balance disappears in perspective.

The laws of exact symmetrical, or equal-sided, composition having become of none effect by our abandonment of the centre-and-wings principle, on account of site or questions of practical service, we no doubt are often tempted to endeavour to restore a quasi-balance by some suitable manipulation of the masses. We believe this anxiety to be born of a misapprehension. As we have suggested, that which in elevation strikes the eye as out-of-balance and wanting redress may not appear to have such defect in actual building. Rochester Castle has an asymmetrical addition. Fond of exact symmetry, this might not please on an elevation. It is doubtful if any, on pure æsthetic grounds, would desire to remove the addition; it might be more than suspected that its removal, while certainly leaving a symmetrical keep, would leave us with a grievance and regrets.

Once we have, either by choice or neces-

sity, abandoned the centre-and-wing plan, we must, we assume, proceed on a different fundamental design principle. Asymmetrical or irregular composition must be adopted without compromise. There must be no weak leaning towards the rules of symmetry, and we should ascertain what will be the true effect of masses in execution before we amend apparent defect on elevation. Equal-side, centre-and-wing composition of a whole façade is one way; the other is totally different. It was, some time back, observed to us on passing a block of office buildings, that it seemed that the tower "should have been bigger." The observation was not made by an architect; but, all the same, it was much to the point. A strictly "symmetrical" façade, with equal mass right and left, up to about roof-line, had on one side a weak, half-hearted turret, an excrescence just budding, one might say. The effect and impression was that the designer had hesitated to destroy the exact equal-sidedness. Had a bold tower been provided, the composition, from a mere tribute to pseudo, or distorted, symmetry, would have passed clear into true asymmetry.

In a very difficult subject, we have endeavoured to suggest two rules for guidance in irregular architectural composition, such as we find must necessarily pertain in the great majority of buildings: firstly, to maintain the great principle of mathematical equal-sidedness in the part, either actually, as in a column, or in spirit and intention, as in the circular turret breaking into the square tower; and, secondly, that when once the symmetrical whole façade is not possible, or not desired, the asymmetric principle should be consistently observed. If we believe in the former suggested rule, we shall not put pilasters with one left-hand volute on the right side of a façade, with a right-hand, single-voluted cap on the left wing. In irregular architectural composition we must needs be too urgently concerned in rendering each part beautiful to have time to waste in perpetrating these or other monstrosities. The offence is against the rule of studied "symmetry" in the part. The strongest argument for irregular architecture, and for dispersed ornamental device, is that each part of the composition may be so fashioned as to be interesting and graceful, irrespective of other parts. In unbalanced (in a sense) composition we need not distort the unit for the sake of some whole effect; and a beautiful building, surely, should be such that, as we pass along, every part, contributory to the whole, should appear an object of interest and beauty. Then architecture bears comparison with music. Our subconsciousness, or memory, holds the general air and

progress of rhythm and melody, while our immediate consciousness is enthralled with the instant harmony. We cannot have it both ways: either there must be symmetry, so-called, or asymmetry—either a St. Owen interior or a west front of Rouen Cathedral.

The idea that we must "balance" in irregular architectural composition is often a delusion, an impression, a legacy of lingering sympathy with exact equal-sidedness, itself largely the outcome of habitual elevational display of architectural device. The lion is sufficiently like the unicorn to balance in heraldic composition; sufficiently unlike to give individual interest to dexter and sinister hands. If we duplicate either the real or the mythical quadruped, we certainly attain exact equal-sidedness; but sameness is substituted for variety. This, by the way, demonstrates the fundamental difference between asymmetry and symmetry, so-called. We cannot, however, deal with architectural mass as the herald employs lion and unicorn. Divergent "twin" towers to cathedral west-ends may have a certain quaintness; but we generally feel dissatisfied, or unconvinced. The failure may, perhaps, be accounted for as the result of an attempt to graft asymmetry on symmetry, which we have endeavoured to show is not possible. We must either produce the monumental, equal-sided building, or start away on a new plan, based on quite a different principle. Small variations in detail are added charms in many symmetrical compositions; but a great belfry is not a detail.

CAST-IRON AND WROUGHT-IRON SMITH'S WORK: NEW AND OLD RAILINGS.

[COMMUNICATED.]

The drawings and photographs just lately published in the BUILDING NEWS of both old and new ironwork are extremely interesting and informing. The word "railings" is very comprehensive in its application, but really is often mis-applied, and it is in some ways misleading. Railing implies ranged in true "regula"; but when used as descriptive of iron fences it is scarcely correct, since "rails" imply horizontal bars, while vertical bars come from "palus," or, more properly, "pales." Fences for practical purposes are palings or palisades, but scarcely a trellis, and they do not strictly include balustrades, though sometimes they are screens, and may be parapets, which also occasionally consist of railings; indeed, lately the fancy seems to be to put iron fencing on the top of stone cornices, as in Mr. Edwin Cooper's design for the Board of Trade new offices, which you illustrated a few weeks ago. Mr. Somers Clarke, when surveyor to St. Paul's Cathedral, added a grille of this sort round the interior of that church, considerably interfering with Wren's design by over-emphasising the depth of the fascia. This only by way as a case outside the immediate purpose.

The enclosure round the outside of this building in St. Paul's Churchyard makes, perhaps, the most satisfactory railing to be found in London, and that to St. Martin-in-the-Fields, Trafalgar square, is of the same order. Among the very worst railings, however, in high places about the Metropolis happens to be the miserably insignificant and commonplace screen along the frontage of the well-known premises of the Royal Institute of British Architects in Conduit-street, W., illustrating the old saying, seemingly, about the shoemaker's wife going the worst shod. The St. Paul's railings have an additional interest, as they are generally said to have been cast by the old Sussex smelting works, where so many excellent firebacks of rich design were made. Why cast iron should have ceased to find favour

is certainly inexplicable, for the triumphs of the bronze-founder equally well demonstrate the possibilities of cast iron. Our failures in the Victorian period in this direction were due to a tendency to emulate wrought smith's work, so hindering a better appreciation of what the founder might and could do. Had the Italians enjoyed the advantage of our available appliances, what great things they would have done in this direction!

London is very rich in good wrought-iron fenceings, and in the environs there are many capital examples, such as the crested railings at Raphael Park, Romford, or the good plain ones of well-proportioned uprights like the gates at Ham House, near Richmond, and again, also in Surrey, the railings once standing round "Canons," at Edgware. Chelsea, Chiswick, Hampstead, Kensington, and Great Ormond-street furnish a first-rate miscellany for reference and study, or, if a model type of the plainer sort needs mentioning to make the writer's standpoint clear, reference is made to the railings at Gough's Park, Forty Hill, Enfield. With all these precedents well within reach, not to mention Jean Tijou's work at Hampton Court, there can be no excuse for vainly attempting nowadays to copy the cruder style of ironwork done in the last century by the more venturesome lights of the Gothic revival; besides, now that taste has changed, such endeavours would be worse than an anachronism. Attenuated feeble copies of the kind continue to be manufactured; but those who do such things lack the wit to select the best specimens done at that time, such as still merit our admiration, and in that category stand the facile designs of George Frederick Bodley, John L. Pearson, and James Brooks, when in his prime. The excellent wrought-iron fence round the Astor offices next the L.C.C. Educational Board headquarters, on the Victoria Embankment, ranks among the most successful of the recent richer work in this way to be noted anywhere in London, though the style is so different from Pearson's ecclesiastical and earlier productions, which for the most part were likewise less elaborate, but always appropriate, as these Astor railings are. This, of course, is a prime consideration, and their details hold their own against the wear and tear of street risks. The extremely good railings associated with the name of John J. Stevenson round his school-board schools built in the eighties want a lot of beating in this regard, and we recall some at board-school premises in Blackheath.

The choir-screen enclosure in St. Peter's Church, Red Lion Square, Holborn, furnishes a most capable specimen of metal design which may be mentioned at this point, because Pearson gilt this piece of smith's work all over, as was done by the old craftsmen who put up such pretty iron fences round royal tombs. Gold leaf, thick in grade, forms the best possible preservative against the deterioration due to the relentlessness of the atmospheric conditions of congested cities. Lead colour corrodes and fills up the interstices and huskwork in scroll foliations unless it is employed very flat. On the other hand, experience proves that the various mixtures, or fortified colours, possessed of so much body, and which face up "as hard as nails," only scale off, particularly at the tops and bottoms of upright pales in open situations, allowing the water to congregate behind the detached skin of paint remaining intact, but partly split off, thereby badly harbouring enough moisture to expedite the rusting away process of the forged metal. In this way these promising protective coatings in countless cases become actively destructive, as the paint flakes off in layers, having no durable adhesive hold upon the metal (or wood either, for that matter) when standing exposed to the weather. The most effective paints for ironwork are really those which bite into the metal after the manner of paraffin oil; but to insure this the iron must be allowed to have a well-rusted surface, the superfluous rust being brushed off before the paint is put on. It then gets a grip and tenaciously holds on and incor-

porates the solution of mastic or asphalt with the metal itself.

Ordinary decorative display in colour has to give place when such mediums as these are employed, and more utilitarian ends must prevail; but in the majority of cases this surely is all the better, artistically speaking, because few parts of any building present a more incongruous appearance than the ironwork does when it is partly coloured or "picked out." Some of the best men of the Gothic revival were the greatest offenders in this way, as when William Butterfield used browns and blues, with flickerings of vermilion here and there, in "flat" paints, suggesting a veritable harlequinade, which, further, only served to emphasise the queer-ness of his detail, for in metalwork Butterfield did only a trifle better than in his woodwork. The screen at St. John's, Hammersmith, illustrates how badly such work in combination can be made, even by such an architect, for much as one recognises his ability in big architectural achievement, his craftsmanship never got much beyond the limitations of the 1851 Exhibition. It will be evident from what is here ventured upon, that the writer is not wanting in appreciation for the work of his predecessors, or prejudiced when criticising contemporary productions.

The need of going back to first principles certainly is too often lost sight of, and everyone is liable to do this when trying to strike out on so-called "fresh lines." At this late period of our national art history, originality must become more and more uncommon. Mere newness or chic display are absolutely fatal to good design, which can only come of inspiration or of evolution, conscious or otherwise. Most of the somewhat trite rules that Pugin insisted on still are as true as ever, and when the apostles of the latest cult in Late Renaissance try essays unguided by precedent they often offend good taste, just in the same way as doubtless may have happened with the Mediaevalists of the 19th century, whom these new lights presume to despise. Even George Edmund Street did work open to question; but there was a thoroughness in all he designed, as in the metalwork well worth calling to see in St. James the Less Memorial Church in Pimlico. Sir Arthur Blomfield did some terrible combinations when he introduced cast-iron columns for church arcades. His essay of this sort in the Marylebone-road is an example, and, on the other hand, he drew out full sizes for wrought iron most excellently in a true Gothic spirit.

In the descriptive particulars which we printed in the BUILDING NEWS about the new Gothicist railings just finished in front of the Victoria Tower Gardens, Westminster, and so capably illustrated on March 19, it was stated that Mr. Lionel Earle, C.B., the secretary of H.M. Office of Works, decided that the official architect-in-chief, Mr. Frank Baines, should frankly work out this scheme on fresh lines, and this may account for much that is peculiar in their production. It is not proposed to occupy space with all that occurs to one about the results now open to the eyes of all who pass that way; but it may be suggested that the most elementary requirement of any railings is that they should effectively rail in the enclosure intended to be enclosed, not only so as to exclude dogs and cattle, but men intruders too. All have heard about, even if all do not actually remember, the day when the mob pulled down the massive railings along our side of Hyde Park. It might be going too far, perhaps, to expect these new railings, just set up by the Office of Works, near the Houses of Parliament, to withstand such an assault as that, though, being in the immediate proximity of the seat of Government, such fences are needed in times of tumult to hold their own and serve as a protection to the Parliamentary precincts. Ordeals of that class, even in war time, may be escaped, but at least in normal days railings should effectively rail in and preclude intrusion from drunkards, suffragettes, or more mischievous individuals. The setting out adopted in these railings may be on fresh

DRILL HALL AT TOTNES FOR THE TERRITORIAL FORCE ASSOC. OF THE COUNTY OF DEVON.

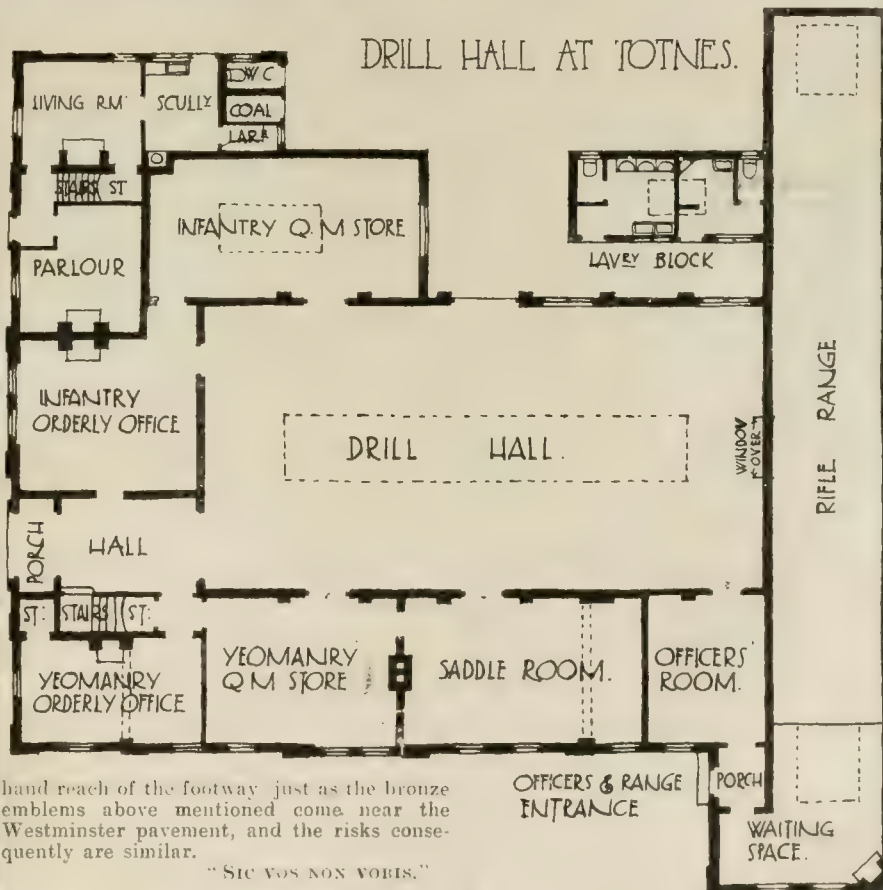
ELLIS SON & BOWDEN F.S.I. ARCHITECTS, EXETER.



lines, but they scarcely supply a true conception of what such a palisade should be like, because they seem to furnish the facilities of a step ladder, owing to their series of longitudinal rails. Rust will be encouraged by the hampered serrated edges consequent upon the beaten patterned surface peculiar to the finish of which much has been made by the Welsh blacksmith who it is said was so timely discovered for this London job. This roughing must make these wrought-iron fences, composed as they are of such thin scantlings, frankly liable to perish within a measurable time from rust and flakings, tough as the metal may be forged.

The site, it is true, has been reclaimed from the boggy marsh once surrounding the great abbey at Westminster; but for all that the railings stand near the river, where the air is often persistently befogged and damp. Cast iron might have stood better, but the associations of the Gothic palace may have precluded that idea, though the new work of Late Classic style being built in Smith's-square hard by might have modified that notion, though the less said the better about the restless ornateness of the Ecclesiastical Commissioners' vulgar pile over the way. The incongruity of all these neighbours, anyhow, is already complete. One detail in Mr. Baine's railings remaining to mention is the attached bronze emblems planted on, as shown by the details which were published. Instead of such bronze appliqué ornaments, the old mediæval smith would have used chiselled iron, if he did anything of the sort at all, which is very doubtful. Such additions will be attractive to the pilfering predilections of the passing loafers or "treasure" collectors of the pavement order, who are here afforded opportunities for the habit of picking and stealing.

The malleable-iron terminals of the railings round the grounds of the Natural History Museum at South Kensington afford a lesson in this connection, because they have had to be renewed owing to the wanton breakages caused by wilful persons going past, and so for a long while very many tops to the standards remained mutilated and gone. This fence is strong-looking and wear-resisting in appearance. We may presume that Alfred Waterhouse intended these terminals to be in wrought iron. They are angular and metal-like in design, though no doubt the work is very weak at the base of their husks, where the leaves join on to the uprights. They also happen to be within



hand reach of the footway just as the bronze emblems above mentioned come near the Westminster pavement, and the risks consequently are similar.

"SIC VOS NON VOBIS."

DRILL HALL AT TOTNES FOR THE TERRITORIAL FORCES, COUNTY OF DEVON.

We give a view and plan of this building, which is now in course of erection at Totnes. It is one of a series designed by the same architects for the Devon Territorial Force Association. Accommodation is provided for a company of Infantry and Yeomanry, with a large drill-hall common to both. A rifle-range is located at the rear, with a separate entrance. On the first floor one wing is comprised of lecture and recreation-rooms, sergeant's room, and servery; the other wing is utilised for the caretaker's bedrooms, etc.

The elevations are in distempered brickwork with red sand-faced plinth, string, and quoins. The roofs are covered with red hand-made sand faced tiles. A bold wooden cornice is provided to the eaves. The main entrance is in Ham Hill stone. The work is being carried out by Mr. R. E. Narracott, of Torquay, from the designs of Messrs. Ellis, Son, and Bowden, of Exeter.

The Mersey Dock Board have adopted a proposal to erect a light single-story shed 400ft. long by 180ft. wide on the quay at the west end, south side, Brookbank branch dock, and to carry out paving works, at an estimated cost of £19,850.

A DISCUSSION OF BUILDINGS-FACTOR COSTS.

By HAROLD L. GREEN.

"No one at the present time can say what is a standard buildings factor proper to a machine-shop, a foundry, or a rolling mill, and this implies that no one is in a position to say that this or that particular instance is an example of efficiency when it is discovered." This interesting statement appears in a well-known book on cost accounting.*

It has been my privilege to develop burden charges in several large industrial plants during the last two years. The development of a buildings-factor, which should include all the expenses attendant upon the ownership, use, and occupancy of a building, and which should be expressed in terms of an annual charge per square foot of floor space in the building, was a necessary part of this work. Although an explanation of how these buildings-factor costs were determined, and what the costs were found to be in several industries, would not set up absolute standards of efficiency, such data would enable relative comparisons to be made, and would serve as a basis for studying the elements of buildings-factor costs, with the object in view of approaching a maximum efficiency.

Therefore, it is the purpose of this article to state the elements of the buildings-factor costs as determined by the writer; to describe how the costs were obtained; to state the average cost of these elements, as found in a large number of specific cases; and to draw brief conclusions, based on the above results, as to how an efficient land-and-buildings factor may be attained.

There is no fixed set of elements making up a land-and-buildings factor. In the majority of cases, however, the elements discussed in this article will include all the costs making up a complete factor for the purpose of a square-foot distribution to departments or production centres as the cost-accounting practice may require. Thus the elements which have been selected are almost universal, while those particular to special industries are not considered. Following is a classification of these elements, together with an explanation of how the cost of each was determined: (1) Fixed charges on land; (2) fixed charges on buildings; (3) fixed charges on buildings fixtures; (4) power and light; (5) heat; (6) building expense.

Fixed charges consist of interest, taxes, insurance, depreciation, and repairs, and are calculated as a percentage of the appraisal value of the land, buildings, and fixtures. The interest rate was taken at 5 per cent. in all cases. Tax and insurance rates were determined for each particular case. These rates were quite uniform, however, and 1 per cent. for taxes and $\frac{1}{2}$ of 1 per cent. for insurance, would be fair averages. On buildings the rates for depreciation and repairs averaged 2 per cent. and 3 per cent. respectively, while for buildings fixtures, which consist of steam- and water-piping, electric-light wiring, elevators, sprinkler systems, etc., rates of 5 per cent. for depreciation and 5 per cent. for repairs were used.

For convenience these rates were summarised in the following table:—

	Land.	Buildings.	Fixtures.
	per cent.	per cent.	per cent.
Interest	5	5	5
Taxes	1	1	1
Insurance	—	1.5	1.5
Depreciation	—	2	5
Repairs	—	3	5
Total	6	11.5	16.5

It is evident that correct interest, tax, and insurance rates can be determined. Correct reserves for depreciation and repairs are open to considerable discussion, however, and the correct reserves will vary with the type of buildings under consideration. As a basis for this article, about twenty-five mill-construction buildings used for paper, textile, and machine-building industries, and costing from 1d. 25 cents to 1d. 50 cents

per square foot, have been selected. The rates given above for depreciation and repairs were used in these mills, and appear to be correct, judging from accumulated cost-accounting records.

The cost of the first three elements—fixed charges on land, buildings, and fixtures—was determined then by calculating proper annual interest, tax, insurance, depreciation, and repair charges as a percentage of the appraisal value of the land, buildings, and fixtures. The next two elements (power, heat, and light) include the cost of power used for lighting buildings and operating elevators, and the cost of steam used for heating. These costs are, of course, based on a determination of how much power and heat is used for these purposes, and how much it costs to make the power and steam in the particular plant.

The amount of steam used for heating was estimated theoretically by the same methods which would be used in designing a heating system for a mill building, and these theoretical results were checked with the known difference in coal consumption between winter and summer months, due to heating. Power used for lighting was frequently developed by a separate generator, which enabled a log of switchboard readings to be used in making this determination. In a few cases power for lighting was purchased. Power used by elevators is, in most cases, a relatively small item, and depends on the size of the elevators and the frequency with which they are used.

In determining the cost of the steam and power used, fixed charges on land, buildings, fixtures, and equipment, as well as operating charges for fuel, labour, supplies, etc., are included. In the several plants under discussion the average cost of steam was 30 cents per 1,000lb., and of power was 2 cents per kilowatt-hour. The cost of power, heat, and light was determined, then, by estimating the power, heat, and light used, and calculating the cost, taking into consideration the cost of power at the plant in question.

The last element, buildings expense, is made up of expense items attendant upon the operation of practically all factory buildings. Under this head has been included labour, such as watchmen, elevator operators, janitors, etc., and the cost of supplies used for cleaning buildings, the cost of water for general factory use, and other similar items.

An attempt has been made in the preceding paragraphs to describe definitely how the total land and buildings-factor has been determined. If this has been done, the data following should have a practical value for comparative purposes, and this discussion should serve as a basis for a study of buildings-factor costs, with the object in view of approaching a maximum efficiency.

The average cost of a square foot of floor space in the buildings, as explained in the previous paragraphs of this article, was 22 cents. As an illustration of the meaning of this cost, take the case of a boring-mill in a machine-shop, which may occupy a space 20ft. by 20ft., when allowance is made for the machine, the operator, and the necessary movement of work at the machine. A square-foot factor—or buildings factor of, say, 25 cents would mean that it costs 20 by 20 by 25 cents, or 100d. a year, to house this machine. Assuming a working time of 2,500 hours a year, it would mean that this cost accumulates at a rate of 4 cents an hour. This buildings-factor charge is an appreciable percentage of the wages paid the machine operator, and is but one of several equally important factors making up the total burden of the industry.

Relatively, the buildings-factor charge was found to be divided between the elements, as shown in the next column:

Division of a Typical Buildings-Factor Charge.

	Percent.	Cents
1. Fixed charges on land	10	2.2
2. Fixed charges on buildings	66	12.3
3. Fixed charges on buildings fixtures	9	2.0
4. Power and light	4	.9
5. Heat	14	3.1
6. Buildings expense	7	1.5
Total	100	22.0

From a study of buildings-factor charges in a large number of plants, the percentages and costs given above have been selected as being those which are attained in average practice. If, in a given plant, any of the above elements are materially greater than the averages shown above, the reason should be at once apparent. The factory site may be on valuable land, the buildings may be of an expensive design, heating and lighting systems may be inefficient, and items chargeable to buildings expense may need investigation.

By far the most important item is that of fixed charges on buildings. The selection of good building materials when making repairs or additions offers an opportunity for a reduction in depreciation and repair charges, which cause about half of this expense. The amount of interest charged to cost will be increased, but the savings in depreciation and repair charges will usually compare very favourably with this amount. Interest and tax charges on land may be decreased by the selection of a cheaper site, and there are many cities offering such locations to desirable industries at the present time. Insurance charges may be lowered by making a few changes in fire-protection equipment, and by insuring with mutual companies, with whom very low rates may be secured.

And after building site and building materials have been selected, and each of the fixed charges lowered as much as possible, the building designed to give the greatest amount of floor space for a given cost will reduce the buildings-factor greatly. Or if it is desired to erect a new building to provide a definite amount of space, it is well known that it will be much cheaper to construct a wide building four stories high than to attempt to get the same amount of space in a one- or two-story building covering a much larger ground area. All the above considerations affect the resultant buildings factor, and the cost per hour of housing every machine in the plant.

Lighting- and heating-system costs can be checked also. If lighting costs are high, the equipment may be at fault, lights may be poorly placed, they may be of a design which takes more power than a better lamp would need, or the cost of the power itself may be too high, excessive heating costs may show that the design of the system is at fault in respect to the location of heating surfaces, the needless exposure of heating surfaces to outside temperatures, the disposition of returns from the system, the methods of circulation, etc., or, again, the cost of the steam itself may be too much. A reduction in buildings expense may be secured by an investigation as to the necessity, or as to the economy of use, of the items going to make up this element.

In conclusion, then, the organisation that can secure a cheap site, that can occupy buildings of good construction and of economical design, that can install efficient heating and lighting apparatus, and that can provide for the proper caretaking of their property, will have the lowest buildings-factor charge, and will have made an important step toward a maximum efficiency in one of the largest factors making up the burden of an industrial organisation.—
"Engineering Magazine."

JUBILEE OF MR. HENRY C. WALKER.

[OF WAYGOOD-OTIS, LTD.]

His world-wide friends will add their heartiest congratulations to those showered at home last Tuesday week, when a large gathering of the principals and staff of Messrs. Waygood-Otis, Ltd., assembled in the Crossway Hall, New Kent-road, to do honour to Mr. Henry C. Walker, the chairman and managing director of the famous makers of lifts and cranes, on his celebration of fifty years' association with the business.

Not only London employees were present, but representatives journeyed from Glasgow, Leeds, Birmingham, Manchester, and Cardiff to show their respect to Mr. Walker. The chair was occupied by Mr. David W. R.

* Production Factors in Cost Accounting and Works Management. By A. HAMILTON CHURCH.

Green (joint managing director), and among those who supported him were: Mr. E. Parry Okeden (late director), Mr. Harry Harmsworth, Mr. R. H. Thorpe, Mr. Charles Clarke, Mr. R. Percy Sellon, Mr. C. H. J. Day (directors); Mrs. C. H. J. Day, Mrs. C. Walker, Miss Walker, Miss Ruth Walker, Mrs. Harmsworth, Messrs. C. Day, J. C. Keeney, W. H. Lambie, Bernard P. Walker, J. Richmond, H. C. Langlands, F. W. R. Scott, A. A. Williams, W. P. Millar, A. J. Hurst, E. Burnel, L. C. Gay, and H. J. Boyce.

Mr. David W. R. Green said his was not a difficult task; he had to introduce Mr. Walker and Mr. Okeden. Every member of the firm wished to pay some honour to a man who had worked unceasingly for fifty

told me to be ready by 6 o'clock; he wanted me to go somewhere. I was to attend a chess club—and this is the result. I do not see chessmen or boards about, but I see a great deal more than pawns, castles, and kings around me; I see those who have been my fellow-workers for many years." Mr. Walker then unfolded the story of the history of Messrs. Waygood, and how those employed to-day were working far differently from those in the early years of the firm's existence. It was the speaker's mother who went to old Richard Waygood and asked that her boy should be employed. He replied: "We've got plenty of work. In fact, he can go into a boiler and help clean it out." When, however, Master Walker commenced his duties he was taken for a spy, but

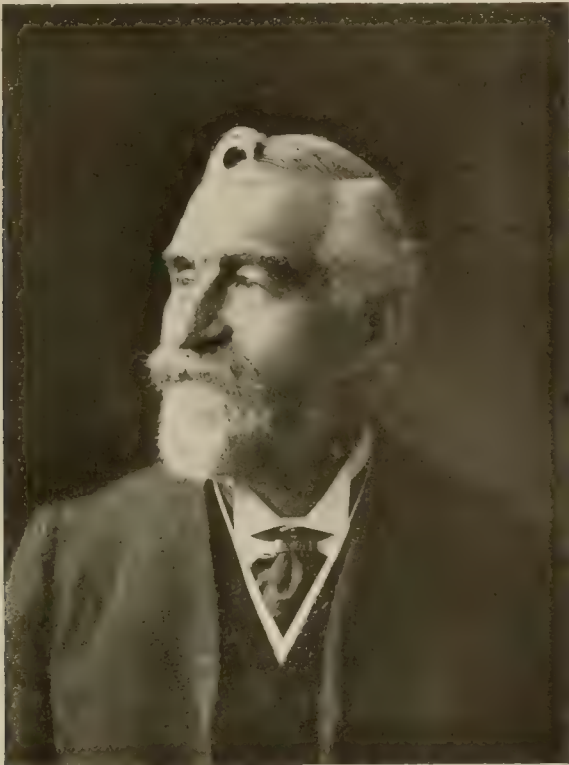
The Chairman, in thanking the committee for the work in connection with the presentation, referred to Mr. Walker's remarks concerning the history of Messrs. Waygood. "We have a company that has been a success, and we have got to make it a success for the future," he said. "I believe confidently in the future. My feeling is that with the combined strength of Messrs. Waygood and Otis we have an unassailable position, and we can make it more prosperous."

During the evening another presentation was made by Mr. H. C. Walker to Mr. Harry Bishop, who had also completed fifty years in the service of the business. The firm's tangible recognition consisted of a silver cup containing a ten-pound note.

Replying, Mr. Bishop said: "I have done my work to the best of my ability, and I am pleased to think that I have been appreciated in the way I have been to night."

It was stated that Mr. Bishop was the fourth employee who had completed half a century with the firm.

The proceedings terminated by giving three rousing cheers for Mr. Walker and by the singing of "For he's a jolly good fellow."



MR. HENRY C. WALKER.

years. Mr. Walker had often given them instructions, but that night he was at their mercy and would have to do as they wished. He would ask Mr. Okeden to make the presentation in their name.

Mr. E. Parry Okeden, amidst loud applause, then presented Mr. H. C. Walker with a handsome mahogany hall clock, upon which was inscribed:—

Presented to Henry C. Walker, Esq., by the staff and workers of Waygood-Otis, Ltd., on the 50th anniversary of his association with the business. 1865-1915.

"I have been asked to present this little token," said Mr. Okeden, "of the enormous esteem and regard in which you are held by the whole of the firm. Nothing could have been more suitable than a clock; I am certain it is in good hands, and I am sure it will be appreciated. Mr. Walker, I make this presentation with very much pleasure."

Mr. Okeden also presented to Mr. Henry Walker an album signed by over six hundred subscribers. About 250 employees of Messrs. Waygood-Otis are at the front, but space is left in the album for further signatures at the close of the war. Among those serving is Colour-Sergeant H. C. Bradbrook, the secretary to the company, who is a member of the London Scottish and took part in that famous regiment's famous charge.

Addressing the audience as comrades, Mr. Henry C. Walker said: "I feel to-night that this is a most delightful surprise. Mr. Green

friendship was soon made. At that time, said Mr. Walker, the principal work of the firm was water-mills, sugar-mills, coffee and rice-mills—but no lifts. "One day we got an order for a lift," continued the speaker. "I remember it because we lost a lot of money over it. Mr. Waygood said to me, 'Walker, if you take another order for a lift I'll kick you out of the place.' I took an order for one the next week," went on Mr. Walker, "and I said 'Shall I send it back?' Mr. Waygood replied, 'I don't like sending it back, and as we have got a good price we had better keep it.' Then we started on hand-lifts and hydraulic-lifts, and went on increasing, and when I think of the number we turn out now from that beginning I wonder how it has been done." Reference was then made by Mr. Walker to the amalgamation with Messrs. Otis, and the unity which existed in the firm. Concluding, Mr. Walker said he could not express his feelings that evening, and although he had worked with them for so many years he trusted he might always feel he had a chair and desk at Falmouth-road, and he believed that the feeling which had actuated the gifts that evening was going to help more and more to cement the unity which existed between employer and employed.

Mr. H. Harmsworth, on behalf of those present, expressed thanks to Mr. Okeden for making the presentation, to Mr. David Green for presiding, and to the officials of the Crossway Mission for their hospitality.

CAUSES OF CONCRETE FAILURES.*

By R. S. GREENMAN.

Concrete is said to be its own best inspector, and it is a well-known fact that defects in concrete will sooner or later make their presence known. For every fault there must be a reason. The reasons for poor concrete have been proportioned as being 90 per cent. due to poor workmanship, 8 per cent. due to poor aggregates, and 2 per cent. to poor cement. These percentages are not the result of tabulations, but are those prevailing in the minds of many who have had considerable opportunity for inspection of concrete; both good and bad. But whether or not these percentages are correct, the statement raises the question: "What are the reasons for poor concrete and how do we determine these reasons?" It is a certainty that neither a laboratory test nor a field inspection alone will give them, unless, of course, it be a simple failure. Yet there are people who will examine a piece of concrete in the laboratory and offer a solution of the problem simply by tests made there. And, again, an inspector will look over a piece of concrete construction, and, with no knowledge whatever of the characteristics of the materials used, nor of the method of making, will attempt to tell how such and such a condition developed. Concrete failures can be explained only after thorough investigation by men who know good or bad concrete from long and close acquaintance, and whose minds are of an analytical and judicial temperament. The more one sees of concrete, the more one becomes convinced that it is the most abused structural material being used. The science of making concrete has been looked upon too generally as being very easily learned, with the natural result that a great deal of poor concrete has been made. Now, however, builders, contractors, and engineers apparently desire to make concrete that will meet the standard in quality required of other materials; and yet, with all the precautions now being taken, there is still a large amount of concrete that is not satisfactory. The larger the work, the greater the care taken; and, vice versa, the smaller the work, the greater the carelessness, and the greater is the ratio of the failures, and it is the sum total of these failures that makes the loss caused by poor concrete so great. In trying to solve a problem of poor concrete, the elements to be investigated are the three already mentioned—cement, aggregates, and workmanship—and water. The common tendency is first to place the blame upon the cement; but if we find that in accordance with good and generally common practice, the cement has been tested and has met the standard requirements, the cement

* Abstract of a paper read before the American Society for Testing Materials.

then becomes a negligible factor; but if it has not been tested, it must be considered as a possible cause, and it may become a large item in the study. We must admit that since so much stress has been laid upon the value of having cement tested before use, and since it must indeed be a small work where it has not been so tested, the percentage of failures due to poor cement has been reduced to a very small amount. If the next element had been given equally as thoughtful consideration to its use, there could not be so much poor concrete due to poor aggregates. The strong and weak points in both the coarse and fine aggregates have been too often neglected. The coarse aggregates can usually be judged by easy inspections, but sand or other fine aggregates need very careful examination. The characteristics of sand—such as the grain, the grading, the cleanness, and its freedom from organic impurities and excess of loam—are items of knowledge which are obtainable mainly in the laboratory, but which are very essential for the correct diagnosis of a concrete failure. The effect of workmanship is by far the largest factor, and in it all others are included, for a poor workman can destroy the value of the best materials. Under the head of workmanship must be considered such items as design, proportions, placing, and actions resulting from heat, frost, electrolysis, etc., which should have been taken care of during the process of making and preservation.

As another element of importance, it must always be kept in mind that the water used in making the concrete, or which may come in contact with it, may prove to be a very influential factor for harmful results. Then, if one is given a concrete failure to diagnose, one must look for a reason under cement, aggregate, workmanship, and water. As stated, the easiest explanation is to look for some fault in the cement; but if, as has been suggested, the cement has passed the usual tests, then other reasons must be found. To find them requires that the investigator shall first know conditions and causes of failures; but these will not be further discussed except to point out the way to the reason; then the investigator must attack the problem with an open mind—that is, he must not jump at a conclusion and expect to be able to work out an explanation around that conclusion. Then it is even more essential that the investigator shall have had an opportunity to learn the results of tests, or to make tests that will enable him to judge the probable actions from the characteristics of the aggregates. Also a very careful examination of the concrete in place is generally an absolute necessity. To attempt to outline a plan for procedure in this examination would be folly, since each individual case has conditions that are decidedly its own, and the law of probabilities makes possible many combinations of causes which can be worked out only as one would solve any involved research problem. Clues must be sought, and a sharp eye, a quick ear, and a questioning tongue must be alert to grasp a clue and pursue it to a definite ending. If anyone should be sceptical of the efficiency of this method, it is possible that a few illustrative cases, selected from a large number of diagnoses, may convince that one that the method has proven, and can prove, successful, far more than is generally expected.

FAILURE DUE TO WATER.

A highway was being built, and the plans called for several new concrete culverts. All but one of these culverts "set up," or hardened, nicely. This one did not; and yet the same cement, sand, and stone had been used as in all the other culverts. A reason for the failure of the one culvert was desired. It was found that the brook which flowed through this particular culvert passed in its course the plant of a company engaged in the manufacture of medicine from herbs. The refuse from the plant so loaded the water with organic matter that it prevented a proper hardening of the concrete. No one connected with the construction of the culvert knew that water so contaminated would have that effect, and the complaint

came in that the cement was not acting properly. The brook was temporarily diverted, other water was used, and the concrete acted normally. A condition had existed there which would not have existed in city water, but which is found frequently in the country, especially in wooded sections. To detect the cause, one had to know that certain elements, such as tannic acid, alkalis, salts, etc., foreign to most waters, do affect concrete.

FAILURE DUE TO SAND.

For an illustration of the effect of a poor quality of sand, consider the following case:—

A cry of alarm came in from an engineer that the concrete in an important bridge abutment had been in place for over two weeks, and that in attempting to remove the forms it was found that the concrete was still so soft that it could be cut out with a knife. A brand of cement new to the work had been used, and the blame was, of course, placed on it. An examination showed that a footing for the abutment had been made of the brand of cement first used on the work, and that, although ten days older, the concrete could easily be cut with a knife. The evidence eliminated the cement. Examination of the sand showed it to be well-graded sharp sand, but a clue was furnished by some yellow-coated grains. The investigator had already had considerable experience with similar sand grains. A trip to the sand-bank showed just what he expected to find. The bank had not been stripped of a top layer of yellow-coated sand, which gives a sand with which it is mixed a tendency to delay very materially the hardening of the concrete in which it is used. In time, usually several months, the concrete will harden, and there is ultimately no harmful effect apparent. Lack of knowledge of this peculiar quality has caused an investigator of another piece of work to tear it out and rebuild.

FAILURE DUE TO STONE.

A very unusual condition existed in another case, but it emphasises strongly the need of following clues. A concrete wall was apparently disintegrating, due, as the engineers believed, to free lime in the cement. In various places on the face of this wall there appeared what can best be described as "blisters." By prying off these blisters, there were produced small cones about 6in. in diameter and 3in. in height; and in the apex of each could be seen a small, yellowish-white spot about the size of a small marble. The trouble was clearly not a case of free lime in the cement. One unusually large blister enabled the author to dig out from the apex a soft stone about 1½in. in size. This stone did indicate the presence of free lime, and, after a few weeks on the author's desk, slaked into a powder. Examination of the stone composing the coarse aggregate soon brought out the following:—

The crushed stone all came from the same quarry, but some came by a steam railroad and some by an electric railway. No concrete made by the former showed blisters. Concrete made from stone delivered by trolley did, but why? It seems that in the course of transportation by the trolley route the stone was conveyed in waste dump-cars, across the grounds of the company owning the quarry and conducting a plant in which limestone is an essential raw material. These dump-cars had not been cleaned carefully, and to the good stone were added some small quantities of stone that had been through a chemical process and were on the verge of disintegration. In the concrete their expansive force blistered the face. By forbidding further deliveries by trolley the trouble was stopped. These may be considered extraordinary cases, but it is the out of the ordinary that makes trouble; if they were not the extraordinary, they would probably have been guarded against. They are, at least, typical of points for which one must look, if one would explain failures in concrete.

FAILURE DUE TO WORKMANSHIP.

Failures due to poor workmanship are seen so often that, instead of citing particular

cases, it will be sufficient to note briefly some causes or results. Failures from faulty design are shown in the mode of failure. The lack of proper proportioning may be clearly seen in a fractured surface; the grading of the aggregates is also similarly noted; and poor mixing and improperly placed concrete readily show themselves. All these are evident to an eye trained to know good or bad concrete. The failure to take care of laitance is made apparent by the seams that are bound to result from such a failure.

A concrete may be dense, but not sound and hard, and "sounding" with a hammer will show up this characteristic. Too wet a mixture with fine sand or silt or a crushed dust used as fine aggregate, may be a cause. It may be sound and hard, and yet be poor for certain uses because it is too porous. By scratching the face of unbroken concrete with a dull instrument, one may sometimes judge of proportions used, and, in its early stage, can also judge somewhat as to the rate of hardening. A pocket glass in the field, and a microscope in the laboratory, help materially in determining the density, and approximately the ratio of cement and fine aggregate to the coarse aggregates. The naked eye is all that is needed to observe concrete spoiled by sweepings of sawdust, shavings, or blocks, or by waste carelessly dropped into a form. Lack of protection to fresh concrete from the sun or unusual heat, may be noted by a "dried-out" and rapidly dusting surface; and from frost, by a flaked and scaly surface.

INFLUENCE OF EXTERNAL FORCES.

When concrete has apparently been good for a considerable period, and has then begun to disintegrate, the reason for the failure must be sought in the character of disintegration, whether it may be due to changes in the elements or forces that have entered into it. If due to an internal influence alone, the fact will be noticed by the granular breaking up of the concrete. If due to an external force, such forces as sea-water, alkali salts, or electrolysis will be under the influence of any of them. For many years, all the failures of concrete were considered as being due to the formation of certain chemical reactions; but, as it is commonly acknowledged at present that an impermeable concrete will stand in sea-water as well as elsewhere, although subjected frequently to more severe actions than other concrete, its failures are due frequently to the same causes as those of other concrete, and therefore the same examinations should give the same results. Similarly, since electrolysis is considered as a cause for the breaking-down of concrete, the liability of concrete being affected by its influence will depend upon whether the concrete comes under the influence of an electric current. If it does, then its influence needs to be examined. If it does not, then the examination should also follow the usual method.

The value of laboratory tests and analyses should not be overlooked. While, perhaps, not giving as definite information as a field inspection, they should be used to the fullest extent to help establish the strength or weakness of a reasonable theory for the cause of failure. Where time will permit, laboratory tests of concrete made of the aggregates under as nearly as possible the same conditions, will give results that should aid in determining the fault in the original. Test specimens so made and treated should give practically the same results, and, when compared with test specimens made under ideal conditions or with standard materials, should give the investigator the reasons for the failure. All means possible should be used by an investigator in making his examination; and his conclusions must be drawn only after he has considered the failure from every probable cause with reason and fairness. The object of the examination is either to place responsibility or to guard against failures, and right conclusions are the only ones that should be drawn if justice to either object is to be given.

Corrente Calamo.

We are entirely unable to felicitate Mr. Lloyd George, as some are doing, on the fact that the actual revenue for the financial year just ended exceeds his estimate by nearly seventeen millions and a half. The province of a competent Chancellor of the Exchequer seems to us to be to reduce taxation when opportunities offer—such as those which have presented themselves during the past seven or eight years. Instead of this, and in direct contravention of the policy of the great finance Minister of the last century, Mr. Lloyd George has set himself to realise large surpluses and is proud of it. The result, so far as our own industries are concerned, has unfortunately been too evident. The building trades have been penalised to help make up the huge sums Mr. Lloyd George has spent needlessly, and which, as in the case of the Insurance-tax, have helped still further to cripple employers. The general result was that when war broke out the basis of the income-tax, super-tax, and the death duties was already oppressively and disproportionately high, and we have to face further expansion of taxation, which has to be borne in a time of diminished incomes and disturbed trade.

In a contract of service between employer and employed, especially where the work to be done, such as that of a draughtsman for engineering, is of a skilled character which takes a lot of learning, the usual covenant against competition, by the employee after this service ends, raises difficult questions. There is no Act of Parliament in any way deciding what is, and what is not, a covenant in restraint of trade. It all depends upon the Common Law, as stated in a series of authorities. For several centuries this struggle as to when such a covenant is valid and binding, and when it is bad, because being in restraint of trade, have gone on in our courts. The judges have always had to decide the point upon the vague principle known as "public policy," which has itself varied from time to time according to the ideas then current. An employer is entitled to "reasonable" protection; but so also is an employee! In the latest case in the Court of Appeal a firm of manufacturers of machinery claimed an injunction against a draughtsman, who had been in their service over ten years, beginning at 15 and rising rapidly, for breach of an agreement he made in 1911. He had there covenanted not to be engaged in any way in the same business in the United Kingdom for seven years after leaving them. He had left and taken an appointment with their chief competitors. Mr. Justice Sargent had held that the covenant was unreasonable, and so void, as it went beyond what was fair, would prevent the draughtsman using the skill and experience gained in his ten years' work: make him begin life over again or go abroad, and so was against public policy for these reasons. The Court of Appeal has now confirmed this ruling on the same broad grounds of justice and common sense.

A member of the Institution of Civil Engineers writes to the daily Press pointing out that this profession will suffer severe losses through the restriction of public work enforced on local authorities by the recent circular from the Local Government Board.

In the writer's own case the commencement of the war absolutely brought to a standstill all foreign work—a very heavy loss. His firm are therefore at present absolutely dependent on the work they are carrying out in England for the support of themselves, the support of the staff, and the payment of the office rent and expenses. Like many others, they happen, unfortunately, to have no work but the construction of new municipal water-works and drainage works on hand, so that, if this order of the Local Government Board is rigidly enforced, it means that there will be no income whatsoever available, and all liabilities for rent of offices, assistants' and clerks' wages, etc., continue. To many architects the cessation of all work on public buildings will be equally ruinous, as the half-crown income-tax will preclude private clients from undertaking fresh enterprises by depriving them of capital.

The inquiry by the Public Accounts Committee at Winnipeg into the alleged errors which have resulted in an increase of the cost of the Manitoba Parliament Buildings from 2,859,750dol. to 4,100,000dol., on which we commented on this page in our issue of March 12 last, is proceeding. Upon examination, the Provincial Architect, Mr. V. M. Horwood, explained the reason for the changes which had been made in Mr. Simon's plans. There had been 369 caissons sunk, he said, and they ranged from 4ft. 6in. in diameter to 18ft. square. The largest ones, 10 or 12, were under the dome part. As tending to show the necessity of using caissons instead of piles, as originally specified, the architect said a great many of the best buildings in Winnipeg were on caissons. He instanced the Union Bank Building, the Fort Garry Hotel, the new addition to the Royal Alexandra, the Electric Railway Building, the addition to the Grain Exchange, the Confederation Life Building. Bedrock foundations were required for heavy buildings, because "the soil of Winnipeg, like that of Chicago, was the worst in the world." It was full of water. Had the Parliament Buildings been erected on a floating foundation, the construction of an adjacent building might have caused the Parliament Buildings to drop an inch, and crack. Cases of that kind had come under his notice in Winnipeg. The Rosemount Block was one. It had cracked across the front as the result of the building of another structure.

The Parliament buildings, said Mr. Horwood, were to be much heavier than any of the other buildings he had named. Some of the walls were 10ft. thick, and this was purely for architectural effect. Of stone construction, this dome would be one of the most substantial things of its kind in North America. The weight on each of the dome piers would be 48,000lb., and the dome would be 222ft. high. Trouble had occurred with other buildings in this vicinity, which had been built on a floating foundation. The C.P.R. elevator at Transcona, which had tipped over, was one, and the Canada Cement Company had had a building, carrying two and a half tons a square foot, split to pieces from the same cause. It was pointed out to Mr. Horwood that he knew the need of bedrock foundations in the Winnipeg soil long before the contract was let. Why had he not advised the Government that the plan of test-holes prepared by the Department of Public Works did not go

down to bed rock? Why had he not advised the Government as to the unsatisfactory nature of pile foundations? Mr. Horwood replied that when a man with a reputation like that of Mr. Simon undertook a contract, it was not usual to criticise him until he had made mistakes.

In a thoughtful Fabian tract on "Socialism and the Arts of Use," Mr. Clutton Brock argues that the Socialistic State would create the atmosphere in which art in things of use would be again a natural and unconscious growth. Mr. Clutton Brock speaks of the modern engineer as the rightful heir of the old Gothic architect, but thinks it is entirely our social conditions which prevent his adding "beauty of expression" to the "beauty of function" which his structures show. Whether the elimination of private profit would turn men's faculties to the creation of beauty or not, the converse is true. The cultivation of sensibility to beauty of all kinds will prevent a man from being engrossed in a mere scramble for material wealth, and surely that is something to be thankful for in these days of vulgar ostentation among the rich, and shoddy imitation by the rest of us!

His considerably increased duties as custodian of enemy property in England and Wales, involving as it has done the guardianship of eighty-four millions sterling and the paying out of £700,000 as dividends, etc., have in no way interfered with the continued expansion of the Public Trustee's regular business. A year ago the accounts closed with a business of all kinds valued at £109,000,000. During the year, 1,543 new estates or trusts came in, of a total value of £11,600,000. In addition 842 new testators notified the department that they had nominated the Public Trustee to act under their future wills, intimating a probable value of £10,000,000. The value of the business in course of acceptance at the present moment is put at £1,600,000, so that the total resort to the department since it was established in 1908 is £132,000,000. Manchester, which now has a branch office, scores for its first year a total value of business of all kinds negotiated there of £5,354,836, and the number of trusts under administration at 220. Evidently Manchester will soon add its quota to the head office's excellent financial success. Since March, 1910, it has been entirely self-supporting, and, after all expenses incurred, on every account since October 1, 1907, have been discharged, the department completes 7½ years' work with a balance to the good of £29,306. As most readers know, the staff has now been incorporated in the permanent Civil Service, and Mr. C. J. Stewart and his senior officers—Mr. E. K. Allen, the Assistant Public Trustee; Mr. L. J. Fulton, the Legal Advisor; and Mr. E. W. Thomas, the Financial Advisor—will be congratulated by all who have benefited by their courtesy and good services, on this recognition thereof.

Londoners not seldom forget their debt of gratitude to Stow, the historian of the capital of the Empire. An acknowledgment of the debt will be made next Sunday, when the anniversary of his death will be celebrated by a visit on the part of his admirers to his tomb in the church of St. Mary Undershaft, in the City. John Stow was born in the parish of St. Michael, Cornhill, in 1525, and

died, and was buried, in the parish of St. Andrew Undershaft, in April, 1665. It is said that he was 70 years of age before he commenced to write his history of London.

The workman had had a "quarter," and the foreman sternly inquired the reason. "It's them new military regulations as is responsible," pleaded the delinquent. "Don't blame me."—"What on earth are you talking about?"—"Well," was the reply, "I 'ad a bit of a flutter last night right enough, but I got up early this morning and calls at the—Arms for a refresher. Found it closed. 'Tom, me lad,' I ses to meself, 'you've made a mistake—it's Sunday morning!' So I went back 'ome to bed. Wouldn't have been 'ere now, only the missus explained matters." *Man. Labor Guardian.*

SOUNDING BOARDS AND ACOUSTICS.

Since its erection in 1910, the Amasa Stone Memorial Chapel of Adelbert College, Ohio, has proved to be unsatisfactory acoustically. The general shape of the building, which is one of the Western Reserve University Group in Cleveland, Ohio, is a long and narrow rectangular, 140ft. by 30ft., and experiments showed the difficulty to be due to general reverberation. It was suggested that a sounding-board be installed to eliminate this reverberation, and Professor Frank P. Whitman, of the University, undertook a series of experiments to determine as accurately as possible just what benefit would be secured by this means. Great care was taken to make the tests under conditions as nearly as possible like those of the ordinary use of the chapel, and involved the actual hearing of ordinary speech. The final comparative test was made first without and then with the use of the sounding-board. This board was of the horizontal type generally considered most effective, hexagonal in shape, and 6ft. in diameter, surrounded by a vertical rim which extended 6in. below the plane of the board. It was supported at a height of a little more than 2ft. above the head of the speaker. Final results showed that the greatest benefit obtained by setting up the sounding-board was to make the hearing some 2 per cent. better in the area, while it actually made the acoustic conditions in the gallery worse. Professor Whitman reported that for all practical purposes a sounding-board was worthless. On the suggestion of Professor Wallace C. Sabine, of Harvard University, the ceiling-panels and upper walls were carefully treated, with great improvement to the hearing properties of the chapel. Unfortunately, our informant does not detail the nature of the alterations to the surfaces; but they probably consisted in roughening them.

A LONG OVERDUE REPORT ON SEWAGE DISPOSAL AFTER SEVENTEEN YEARS' DELAY.

The final report of the Commissioners appointed to inquire and report what methods of treating and disposing of sewage may properly be adopted has at length been published. This Commission was appointed by Queen Victoria in 1898, when the late Sir Matthew White Ridley was Home Secretary, and K. L. E. and K. L. George. Of the nine members originally appointed, only three are now living, and the report is the work of the last three.

The final report now presented consists of a general summary of the conclusions and recommendations contained in the nine reports already submitted for the disposal of liquid wastes from manufacturing processes and the disposal of domestic refuse in rural areas. Much of the material has necessarily become out of date. In regard to the first part of the report, the Commissioners say that the methods of treating and disposing of sewage at the time of the report were not satisfactory, and that the methods of treating and disposing of sewage at the time of the report were not satisfactory, and that the methods of treating and disposing of sewage at the time of the report were not satisfactory.

county authorities, they found that efficient means of purification were available in the case of some, but not all. Trade liquids—many wastes—the impurities of which were mainly in solution, could be considerably improved by clarification, but could not in the present state of knowledge be thoroughly purified. Hence the requirement of the existing law that trade wastes should, subject to certain conditions, be rendered harmless, was in many cases impracticable, and authorities charged with the duty of administering the law had to exercise their own discretion in regard to the degree of purification to be demanded of manufacturers. The Commission consider, therefore, that, as in the case of sewage effluents, there should be prescribed for trade effluents a standard of purity which should at once be a guide to the administrative authorities and a security to manufacturers in regard to the extent of their obligation.

They found, further, that, owing to the wide differences in the character of the various trade wastes, both as regards their effect upon streams and as regards difficulty and expense of treating them, it would be necessary to consider each kind of trade waste separately, with a view to suggesting the appropriate standard. The Commission think a single standard for each trade would suffice, with a provision for raising or lowering it in exceptional cases.

Mr. K. J. Foster, of Chelmsford, has been appointed highway surveyor to the rural district council at St. Germans, East Cornwall.

Extensive additions are being made to the Golden Bridge, Convent in St. Vincent street, London. The builder is Mr. M. Kemp, of Smithfield, Dublin.

A George Washington memorial building is to be erected on the site of the old Pennsylvania Railroad station at 6th and B streets, Washington, D.C.

The sanction of the Local Government Board has been given to an application of the Southend-on-Sea Town Council to the borrowing of £2,675 for a recreation-ground, an electricity substation, and works of street-improvement.

Mr. C. A. Owen, F.R.I.B.A., of Dublin, has been appointed to advise and report upon the proposed enlargement of Ennisorthy District Lunatic Asylum. Extensive additions to the asylum were carried out in 1903 from Mr. Owen's plans.

New premises are about to be built in Dame-street, Dublin, for the Irish United Assurance Society. The street façade will be of chiselled limestone from Ardbraccan Quarries, Navan. Mr. T. F. Macnamara, of Great Brunswick-street, Dublin, is the architect, and Messrs. O'Rafferty and McGahan, Great Strand-street in the same city, are the builders.

During the past twelve months only 129 dwelling-houses have been certified for occupation in Rochdale, against 221 in the preceding year. It was stated to the building committee of that corporation at their last meeting that the number certified last year was the smallest for twenty-one years. There are only sixty-six houses now in course of erection in the borough, against ninety at this time last year.

Mr. Alexander Elder, of Albert-road, Southport, one of the founders of the Elder, Dempster Line and the British and African Steam Navigation Company, who died on January 25 and left a large estate, bequeathed with other large legacies, £100,000 in trust to build, fund, and endow a hospital for the poor of Goran at or near Elder Park, and £50,000 to the Glasgow Western Infirmary for a new Alexander Elder wing.

Culverley Bridge, Beaulieu, recently constructed by the New Forest Rural District Council, is situated about two miles from Beaulieu, on the road to Beaulieu-road Station. It is a structure of reinforced concrete upon the Kahn timber system, and replaces a timber structure erected in 1854. The opportunity has also been taken to widen the road approaches and to provide permanent iron fences to the embankments, thus insuring greater safety to the public. The bridge is 18ft. high. The works were designed and carried out under the supervision of Mr. W. H. Masters, engineer, Southampton. The contractors for the whole works were Messrs. R. Bright and Son, Bartley, Southampton.

OBITUARY.

We regret to announce the death of Mr. Samuel Flint Clarkson, F.R.I.B.A., past president of the Architectural Association, at the age of 75 years. Mr. Clarkson, who had been ill for some time and retired from the exercise of his profession five years ago, died on Saturday at his residence, 43, Holland-road, Kensington. He was for many years in practice with his brother, Mr. John Clarkson, in High-street, Poplar, and Great Ormond-street, Bloomsbury. Among the works he carried out were public baths near Drury-lane, and the Passmore Edwards free library at Poplar, illustrated by perspective, plans and sections in our issue of October 14, 1892, and several banks and other mercantile premises. Mr. S. F. Clarkson was district surveyor for North Kensington from 1886 until 1903, when he was appointed for South Kensington, a post from which he recently retired. He became an Associate of the Royal Institute of British Architects in 1869, and in 1885 became a Fellow. Since 1860 he had been a member of the Architectural Association; he served as hon. secretary in 1872-75, and was vice-president 1876-77, and his address as president, delivered on his assumption of office in October, 1879, evinced wide reading and considerable literary ability. He leaves a widow, a son, Mr. G. F. Clarkson (who has been for the past ten years a member of the Architectural Association), and a daughter.

Mr. William Henry Duffield, F.R.I.B.A., of Cloak-lane, Cannon-street, E.C., died on Thursday, the 1st inst., at 29, Hayne-road, Beckenham. Mr. Duffield, who was in his 55th year, was the third son of the late Rev. H. G. Duffield, and had long been in practice in the City. We illustrated Messrs. Thorne's Brewery, Nine Elms, S.W., built from his designs, in our issue of September 9, 1898, and Messrs. Isherwood, Foster, and Stacey's brewery at Maidstone, in which Mr. Duffield was associated with Mr. G. T. Harpur, in our number for October 28, of the same year. Mr. Duffield joined the Royal Institute of British Architects as an Associate in 1882, becoming a Fellow sixteen years later.

Mr. Samuel Douglas Topley, A.R.I.B.A., associate member of the council of Palace-chambers, Bridge-street, Westminster, died after a very short illness from pneumonia on the 31st ult., at 77, Belmont-road, Lee, Kent, at the early age of 31 years. He was the third son of the late Mr. Samuel Topley, and had been in partnership with Mr. Paget L. Baxter until the latter gentleman joined the forces at the front. Among the works they carried out were some business premises in High-street, Norbury, illustrated by a drawing in last year's Academy. Mr. Topley was an able champion of the Associates' rights at the Institute and took a prominent part in devising the new scale of architect's charges recently adopted.

The death is announced, at the age of 36, of William Henry Gibson, M.S.A., of Bulawayo. The deceased was articled to Mr. W. Watkins, F.R.I.B.A., or Lincoln, and after gaining further experience as an assistant to several well-known London architects, he commenced practice in London in conjunction with Mr. J. D. Robertson. He was subsequently selected by Mr. Herbert Baker, F.R.I.B.A., to assist on the designs for the new Government Offices at Pretoria, and afterwards joined Mr. Robertson again, this time at Bulawayo, where the firm were successful in winning two important open competitions—viz., the new Municipal Offices, at Bulawayo (£40,000), and at Bechuanaland (£30,000). Both partners joined the Society of Architects in 1913, and were also members of the South African Branch, at Johannesburg.

Mr. Thomas William Dowsett, sergeant Hon. Artillery Company, was killed in the trenches between Ypres and La Bassée on January 30. Mr. Dowsett, who was twenty-three years of age, had recently been admitted student of the R.I.B.A. Having produced the evidence required by the Board of Architectural Education as to his education and training, he was exempted from the

preliminary and intermediate examination, and was registered as student R.I.B.A. last June. He had passed through the Architectural Association four years' course, and had studied at the Atelier. He was an assistant in the office of Mr. Leonard Stokes.

Mr. John Cathles Hill, of 7, Linden-gardens, Highgate, formerly a well-known builder and brick manufacturer in Peterborough, Ponders-end, Great Bentley and Archway-road, Upper Holloway, died on Easter Monday at Brighton. Mr. Hill, who was 57 years of age, started as a journeyman carpenter, but in 1881 he began business as a speculative builder with £300 capital. He built and acquired or financed the building of over 2,000 houses in and near London and Peterborough. He was also interested in brickworks in various parts of the country. In 1910 he became a member of the London County Council, but resigned his seat early in 1912, and in May of that year was adjudicated bankrupt, his gross liabilities being estimated at £1,194,000. The case again came up at the Bankruptcy Court on the 4th ult., when the order of discharge was suspended for two years.

The late Mr. Edward Green, Park View, Abington, near Northampton, builder, left net personality £4,338 and a gross sum of £35,215.

Louth Rural District Council have appointed Mr. T. Ingle, of Kelbrook, near Colne, to the post of highway surveyor at a salary of £100 a year.

The foundation-stone of a new hospital on the Dunes at Aberavon has been formally laid. The cost will be £3,333. Mr. F. B. Smith is the architect.

Extensive additions are being made to the railway-station at Hourah, near Calcutta, from plans by Mr. Stephen Wilkinson, L.R.I.B.A., of Dalhousie-square, Calcutta.

It was stated at the last meeting of the Kesteven County Council that a site for the council's new offices in Sleaford market-place had been purchased for £1,925.

The Co-operative Society's premises at Norwich have been extended by a new bakery at the corner of Queen's-road and Ashby-street, which was formally opened last week. Mr. H. J. Hannant, of Norwich, was the builder.

In connection with the construction of the East-to-West Trans-Australian railway, arrangements have been made to equip the works with four wireless plants, to enable the working parties to keep in touch with each other.

Aberdeen University Court have accepted with thanks from Mr. James E. Crombie, LL.D., a member of the Court, a gift of £2,500 to enable the Court before next academic year to appoint an additional Lecturer in Forest Botany.

The work of preparing the site of the new eye infirmary at Dudley and out-patient department of the Guest Hospital has just been started. The site, which adjoins the hospital grounds and faces Tipton-road, was given by the Earl of Dudley, and is valued at £5,000. The contract for the building amounts to £4,050.

The electric-tramway line from Colwyn Bay to Old Colwyn has been completed and opened for traffic. The road-widening work which was necessary to accommodate the tramway traffic with the ordinary traffic of the Abergele-road is not yet finished in some places, but is being pressed forward. The extension is nearly two miles in length.

A county house, Wassell Grove, Hagley, which was for many years the residence of the late Alderman Garratt (at one time mayor of Dudley) and his family, was recently opened, after work of renovation and equipment costing about £1,050, as a convalescent home for patients from the Birmingham Poor-law infirmaries, and is the first of such institutions in the Kingdom under Poor-law management. Wassell Grove is built on a well-wooded estate, with a fine prospect of Clent Hills.

It was announced on Tuesday, at the Surrey Quarter Sessions, by the Standing Joint Committee, that they had postponed the consideration of the question of proceeding with the work for the extension of the County Hall at Kingston, which is estimated to cost between £45,000 and £50,000, having regard to the undesirability of incurring capital expense at the present time, and the possible refusal of the Local Government Board to sanction a loan.

Our Illustrations.

TOWERS AND SPIRES OF OXFORD, AS SEEN FROM THE ROOF OF THE SHELDONIAN THEATRE.

The oil-painting from which this reproduction was taken represents the very centre of Oxford's richest buildings and historic associations. In the quadrangle in which the Sheldonian Theatre stands traces are found of remains of the old city wall, passing hence to the gardens of New College (extreme left of picture), founded by William of Wyckham, 1379, the old Fosse outside the wall passing along what is now known as Broad and Holywell-street. To the left a distant view of Magdalen College Tower is seen, situated between the old east gate of the city and an ancient ford, founded in (1457) on the site of a former hospital (1231). The tower forms a striking feature to the eastern approach of the city. Towards the right-hand of the picture is seen the tapering spire of St. Mary's, the University church so prominent in the city, and it marks the line of the High-street, one of the finest of European streets. The church is on the site of an older structure of the date of Alfred, and was built in the reign of Henry VII. The fine Renaissance porch, with statues of the Virgin and Child, so well known to all visitors to Oxford, was added in 1637, at the expense of Dr. Morgan, chaplain to Archbishop Laud. To the right, behind St. Mary's Church, and in the background is seen the top of the fine massive tower of Merton College (1265), adjoining the Church of St. John Baptist (1264-74). The dome in middle-distance centre of the scene is the cupola of the Radcliffe Library, built by Dr. Radcliffe (1749). It is a familiar and splendid building, forming a stately addition to the Bodleian Library, of world-fame, founded by Sir Thomas Bodley, and opened (1602), together with the schools (1421-27), the Sheldonian Theatre (1664-69), forming a group unequalled in historic fame. These notes have been sent us by Mr. Ernest A. S. Benney, A.R.C.A., the artist of the view, which he has kindly lent for illustration.

"CARIAD," GORING-ON-THAMES, FOR THE EARL OF SHREWSBURY AND TALBOT, K.C.V.O.

In our issue of March 26, we gave a plan and general exterior view, with a pair of interiors of the hall. To-day we publish a perspective of the garden-front of the house, and on another plate give views of the entrance-lodge, the boathouse, as well as the stable wing and yard gates, all sketches showing the picturesque character of the buildings and their surroundings. Mr. W. T. Walker, F.R.I.B.A., of Finsbury-square, is the architect, and Messrs. Lawrence and Co., of Finsbury, are the builders.

HOUSE, TITLARK'S HILL, SUNNINGDALE.

With the perspective drawn by Mr. Briant A. Poulter, plans are herewith reproduced, accompanied by a pair of sections, in illustration of this uncommonly picturesque house, which is now in course of erection for Mr. A. K. Stothert. The lay-out has been arranged to fit the site, which commands fine views over the well-known golf-course of Chobham Common. The view shows the entrance front. On the garden side there is a segmental verandah, with a balcony above approached from the principal dressing-room. The house will be finished with rough-cast on the lower walling and tile-hanging above. The roofs will be covered with old tiles. The interior is to be treated simply, except the drawing-room, which will be furnished with old panelling brought from a house in London. The ceiling will be barrel-shaped, enriched with decorative plaster ornament. Messrs. Norris and Co., of Sunningdale, are the general contractors. The architects are Messrs. Tubbs, Messer, and Poulter, of Craig's-court House, Whitehall, S.W.

TILBURY URBAN DISTRICT COUNCIL HOUSING SCHEME.

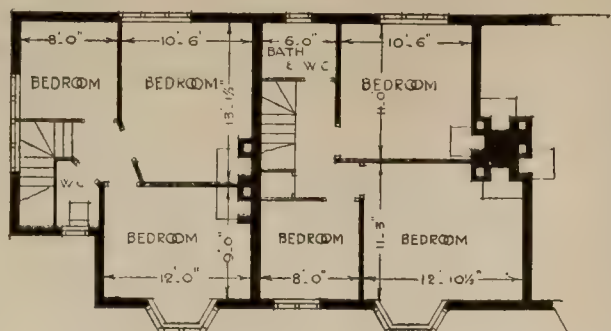
Almost ever since the formation of the Tilbury Urban District the Council has realised the inadequacy of housing facilities in their municipal area. The Tilbury Docks, famous the world over, employ many hands, and when the important improvements now in progress are completed the dockyard authority will employ many more. At present there is not local housing accommodation for the workers already employed, and many of them have to have their homes in far-away places. Tilbury, therefore, wisely intends to be self-sacrificing—hence this housing scheme. The Council also decided that the houses to be thus provided shall not only be useful and economical, but likewise beautiful as far as possible, and built in pleasant surroundings. With this object a comprehensive scheme has been prepared by Messrs. Pepler and Allen, F.R.I.B.A., M.T.P.I., B.Sc.(Eng.), architects, of 4, Arundel-street, W.C., acting in conjunction with the surveyor, Mr. S. A. Hill-Willis, M.Inst.M. and C.V.E. The scheme, which has been sanctioned by the Local Government Board, embraces altogether 150 houses, which are to be built of brick with tiled roofs. The bricks are being chosen in three shades of brindle red, sand-faced, with lighter quoins, pointed in cement outside, and the roofs are to be covered with red sand-faced tiles. The houses are grouped into three classes, all of which we illustrate to-day. Class A: Containing living-room, parlour, scullery, bath, and three good bedrooms. Net rent, 6s. 8d. per week; with rates and taxes, 9s. 3d. per week. Class B: Containing living-room, scullery, bath, and three good bedrooms. Net rent, 5s. 2d. per week; with rates and taxes, 7s. per week. Class C: containing living-room, scullery, bath, and two good bedrooms. Net rent, 4s. per week; with rates and taxes, 5s. 3d. per week. The scheme comprises two groups of houses in the south ward, near the docks, one of 100, and the other of 50 houses. One group contains 16 of Class A and 84 of Class B in blocks of four and in pairs, and the other 50 of Class C in blocks of eight and four. Open spaces are provided, and the houses are pleasantly grouped, and each set should comprise an agreeable settlement. There were many difficulties to contend with, as the south ward sites are low and unstable, and require reinforced concrete rafts for the cottages. Despite these difficulties, it will be found that the economic rents to be charged are well below the local average for similar accommodation. The houses also are infinitely more pleasant and agreeable in themselves and their surroundings, and much better built on proper foundations, and are to be erected when building is far more costly than when the existing cottages were put up. The reason for the grouping is partly governed by the shape of the district, which is long and narrow, running up from the Thames on the flat for about two miles to the hills.

* * We understand that the photographs of Norman doorways lent us by Mr. C. E. Keyser, M.A., F.S.A., and published last week, were not taken by him personally, but were photographed, as well as printed, by Mr. Marcus Adams, of Reading, and in this way nearly 2,000 photographs have been taken by him for Mr. Keyser's lectures and papers.

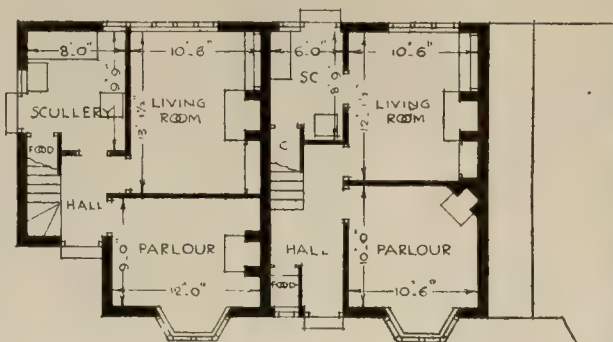
A two-light memorial window to the late Mrs. Hockaday was unveiled at St. Matthias Church, Plymouth, on Thursday in last week. The window represents in one panel the Blessed Virgin Mary, and in the other the Good Shepherd.

The recent celebration by the Cincinnati Chapter, American Institute of Architects, of its forty-fifth anniversary was an event of unusual interest in architectural circles in that city. The President, Mr. George Anderson, occupied the chair at the banquet and subsequent meeting, and at the latter gathering addresses were given by Mr. John I. Maura, of St. Louis; Mr. Herbert Briggs, of Cleveland, and Dean Harry, of the University.

TILBURY URBAN DISTRICT MESSRS PEPLER &

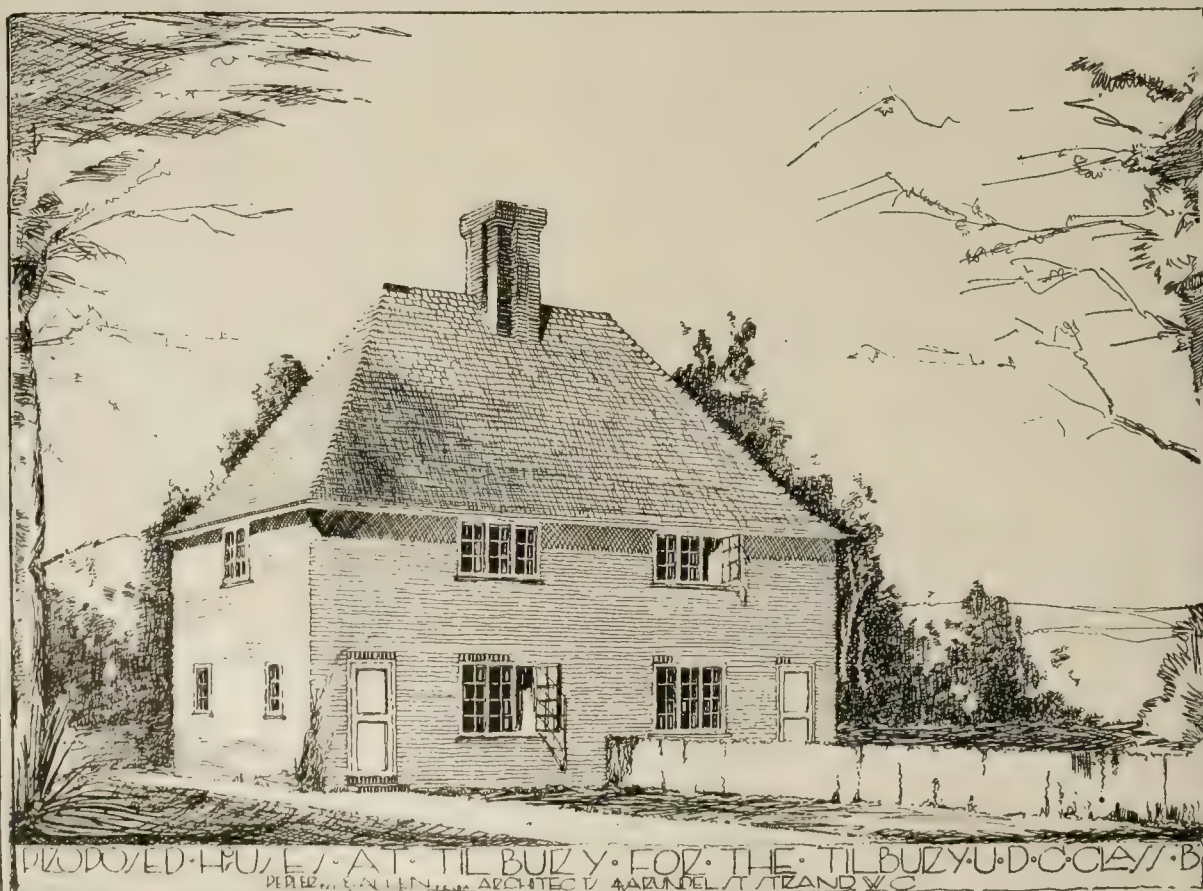


FIRST FLOOR



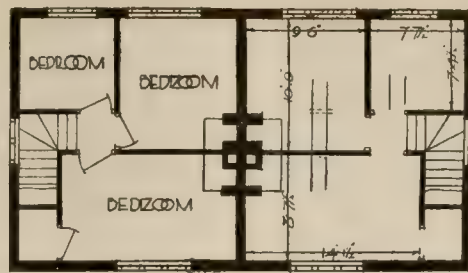
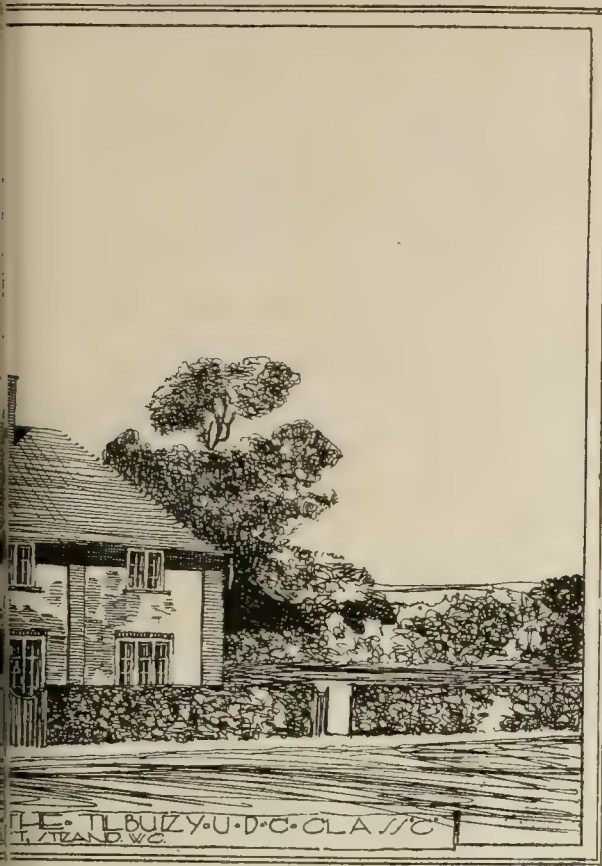
GROUND FLOOR

CLASS A



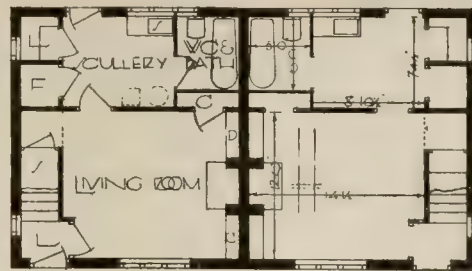
APRIL 9, 1915.

INCIL HOUSING SCHEME EN ARCHITECTS



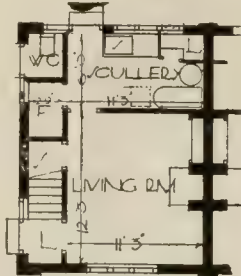
BEDROOM PLAN

CLASS 'D'

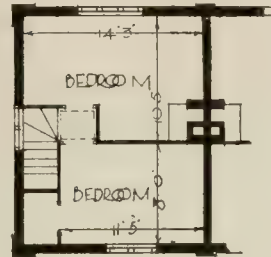


GROUND PLAN

CLASS 'C'



GROUND PLAN



FIRST FLOOR PLAN



PROPOSED HOUSE AT TILBURY FOR THE TILBURY U.D.C. CLASS 'A'

DESIGNED BY ALLEN ARCHITECTS, LONDON, E.C. 4

PROFESSIONAL AND TRADE SOCIETIES.

DEVON AND EXETER ARCHITECTURAL SOCIETY.—The annual meeting of this society, which embraces the counties of Devon and Cornwall, was held on Saturday, March 20, at the Central Hotel, Plymouth. The chair was taken by the president, Mr. J. Archibald Lucas, F.R.I.B.A. (Exeter), and among those present were Messrs. C. Cheverton, vice-president (Devonport), L. F. Tonar, J. Jerman, T. A. Andrews (Exeter), E. Coath Adams, A. S. Parker, B. P. Shires, A. C. A. Norman, J. S. Davis, H. Watts, R. A. Mill, C. H. L. Varcoe (Plymouth), and Allan J. Pinn, hon. secretary (Exeter). Apologies for absence were received from Messrs. J. Crocker, C. Cole, J. M. Pinn, S. Dobell, C. King, M. A. Bazeley, W. A. Vercoe, S. Hill, E. F. Hooper, N. G. Bridgman, and A. J. Adams. The annual report, together with the balance sheet, was received and adopted. The report shows an increase of two in the membership. The president referred to the death of Mr. R. H. Arthur, of Plymouth, who was for many years a member of the society, and a past member of the council. The president then delivered his address, in the course of which, after deploring the consequences of the war, he continued: "But now, in this time of leisure, let us put our house in order when we have more time to think of others than only of ourselves. Let us press forward Registration. Every profession seems protected except ours. Let us impress upon all public bodies the advantage of engaging skilled architects for purely architectural works. Architects, as individuals, are too retiring. In my opinion, they should endeavour to get on every public body they can and make themselves heard. Take town planning and housing. Who have a better right to be consulted than practising architects? I will refer to one instance of the latter. The corporation of Exeter called in an expert to advise them as to the development of Exeter on town-planning lines. To my mind, all that is ancient and associated with the history of an old city like Exeter should be preserved and as far as possible improved, always bearing in mind to maintain its character. This production did not deal at all with the undeveloped land outside the city, but struck right at the heart of it. It proposed a grand square opposite the museum in Queen-street, with a Carnegie library, a town hall where the Higher Market stands, an art gallery at the corner of Queen-street and High-street, the detachment of the Guildhall, a garden and, naturally, a playground for children adjoining the Guildhall, the demolition of St. Pancras Church (probably the oldest church in the city—a production something like Old Temple Bar at the High-street end of Martin's-lane), and last, but not least, a new street from the front of the Guildhall to the Cathedral Yard. The scheme is very dormant now, but gets a short awakening at times. Apart from its cost, to embark upon such an idea would detract from all the beauty of our present High-street, and, whilst it may be fit for a modern town, is out of all question for the historical City of Exeter. I am glad to say your council have appointed a committee to watch this scheme from our point of view. At the present time sales of property are not taking place very rapidly; but, despite all these at present unfavourable times, I feel convinced that when peace comes and it is said it is likely to come sooner than many of us imagine, there is going to be a great trade boom, in which we shall get our share." A cordial vote of thanks was proposed by Mr. B. P. Shires to the president for his excellent address and the able conduct in the chair during the past year, seconded by Mr. C. Cheverton, and supported by Mr. J. Jerman. A portion of the rules which had been revised was presented to the meeting, and, after discussion, was adopted. The following officers and council were elected for the ensuing year: Mr. Charles Cheverton, M.S.A. (Devonport), president; Mr. L. F. Tonar, F.R.I.B.A. (Exeter), vice-president; Mr. S. Dobell

(Exeter), hon. treasurer; Mr. Allan J. Pinn, A.R.I.B.A., hon. secretary; and Messrs. J. Crocker, F.R.I.B.A., C. Cole, M.S.A., and J. Jerman, F.R.I.B.A. (Exeter) to fill the vacancies on the council of those retiring, as well as those remaining in office—viz., Messrs. A. S. Parker, F.R.I.B.A., Harold Watts, A.R.I.B.A. (Plymouth), and A. J. Cornelius, M.S.A. (Plymouth), and J. A. Lucas, F.R.I.B.A. (Exeter). The newly-elected president, Mr. G. Cheverton, in taking the chair, thanked the members for the honour conferred upon him, and said he would endeavour to carry on the work of the society as had been done in the past. Mr. Cheverton proposed a hearty vote of thanks to the hon. secretary, hon. treasurer, and hon. auditor for their services during the past year, and bore testimony to the efficient manner in which they had carried on the business of the society, which was supported by Mr. J. A. Lucas and Mr. J. Jerman. This was carried by acclamation, and suitably replied to by the hon. secretary, Mr. Allan J. Pinn, and the hon. auditor, Mr. L. F. Tonar. Subsequently the members lunched together, after which they proceeded to inspect some of the old houses and buildings in Plymouth.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.—A meeting of the society was held on Tuesday, March 30, at 64, St. James's-street, Nottingham, under the chairmanship of the president, Mr. Harry Gill. Mr. R. C. Stenson was elected an associate. After other business had been disposed of, the President introduced a discussion on town-planning, dealing more especially with the various legal points to be considered. Mr. Pare, the surveyor to the West Bridgford U.D.C., gave the meeting actual figures of the costs of road-making, which Mr. Calvert, of Nottingham, supplemented. Mr. Bromley then dealt with town planning, more particularly from the architect's point of view, and remarked that in his opinion it was the enormous cost of road-making according to by-laws which influenced all schemes of housing reform. The frontage had consequently to be cut down to the narrowest limits. He showed by sketches and diagrams suggestions for improving the planning of small property so as to give every room more day and sunlight. An interesting discussion took place, in which most of the members present took part, and at the close thanks were accorded to the President, Mr. Pare, Mr. Calvert, and Mr. Bromley, for the useful information they had given.

NORTHERN ARCHITECTURAL ASSOCIATION.—The annual meeting of the Northern Architectural Association was held on April 1, at Higham-place, Newcastle-on-Tyne, Mr. C. S. Errington (vice-president) in the chair. Mr. Errington said the president, Mr. R. Burns Dick, had been called upon to take part in the defence of the country, as captain in the Tynemouth Garrison Artillery. He moved: "That subscriptions for the current year due on January 1 be remitted in the case of members who were at that time actively engaged in the defence of their country." The resolution was agreed to. The annual report for the fifty-sixth session stated that there were 84 members, 81 associates, and 30 students, as compared with 84 members, 80 associates, and 27 students in 1913. Regret was expressed at the death of Mr. Thomas Reay, the second oldest member of the association, which he joined in 1870. By the will of the late Mr. Wm. Glover the association had received during the past session a further sum of £500, which had been invested in Union of South Africa 4 per cent. stock. The boundaries of societies allied to the Royal Institute had recently been revised, and in consequence the county of Cumberland had been transferred to the association from the Manchester Society of Architects. A War Committee had been formed, consisting of the whole of the members of the council, acting in conjunction with the Royal Institute War Committee. As a result of an appeal to the members, the sum of £21 9s. had been raised and sent as a first instalment, together with 20gs. voted by the

council from the general funds to the Royal Institute War Relief Fund. The Council had granted permission to the Armstrong College, which had been turned into a military hospital, to use the rooms of the association for the purpose of holding architectural classes during the war. It was decided that no prizes be offered for students during the ensuing session. Mr. J. W. Dyson moved the adoption of the report, which, he said, was very satisfactory. He was proud of the fact that about one-seventh of their members were serving their country, and if it fell to their lot to have to defend our shores, he was sure they would give a good account of themselves. He referred to the work of the president for the association, and now he was performing his military duties with vigour. The Chairman seconded the adoption of the report, which was carried. The statement of accounts showed an income of £185 3s. 2d., including a credit balance of £49 from the previous year, and an expenditure of £184 2s. 10d., leaving a balance in hand of £1 0s. 4d. The accounts were also passed. The following officers were appointed for the ensuing year: Mr. R. Burns Dick, president; Mr. C. S. Errington, vice-president; Mr. J. T. Cackett, hon. treasurer; Mr. H. L. Hicks, hon. secretary; Mr. C. I. Greenhow, hon. assistant secretary; and Mr. J. Bruce, hon. librarian.

The foundations are being laid of a new Church of All Saints at the junction of Victoria-street and Southern-road, Basingstoke. The cost is estimated at £7,000. Messrs. Benfield and Loxley, of Oxford, are the contractors.

The late Colonel Robert Townley Caldwell, Master of Corpus Christi College, Cambridge, 1906-1915, bequeathed the portrait by Hudson of the Hon. Mrs. Keppel and a landscape in oils of the Thames at Twickenham to the Master and Fellows of his college, for the Masters' Lodge.

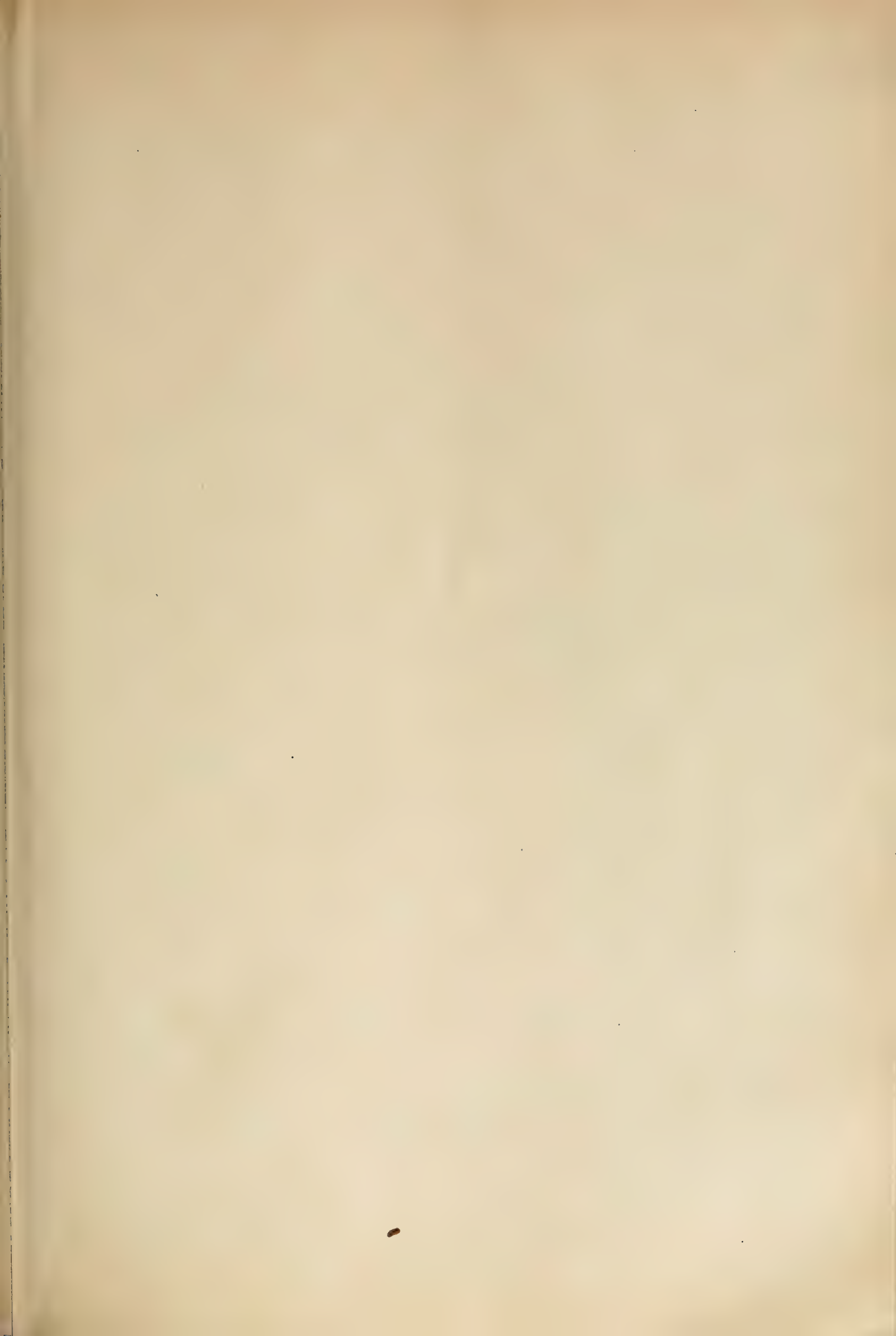
The "American Architect" states that a general and welcome resumption of building operations is taking place in New York. During February, in the borough of Manhattan, plans were filed in the Bureau of Building aggregating in estimated expenditure 4,982,000dol, while in February, 1914, the total estimated cost of structures for which plans were filed was but 1,766,815dol.

A stained-glass memorial-window, gifted by Mr. Edward James Young, London, has just been placed in the south wall of the High Church, Inverness. The window is divided by a transom into two upper and two lower lights. In the upper lights is the subject of the Angel and the Maries at the Sepulchre; the subject of the lower lights is Christ bearing the Cross, with Simon of Cyrene, and other figures representing the Disciples and the Sorrowing Women.

The Middle Ward District Committee of Lanark County Council, meeting in Glasgow last week, passed a resolution approving of a scheme of town planning to embrace an area of between 5,000 and 6,000 acres. The area includes Newton, Hallside, Carmyle, Mount Vernon, Baillieston, and Bargefield. A resolution to make application to the Local Government Board for authority to prepare a town-planning scheme for an area of 900 acres to the south of Cambuslang was adopted.

New field and signal companies are again being raised by the 1st London Divisional Engineers (T.F.), three units having already gone on active service. Men connected with the building and constructional iron trades, all round electricians, and some drivers are needed, as well as telegraphists, telephone operators, harness-makers, wheelwrights, and shoeing smiths. Applications should be made to Headquarters, 10, Victoria Park-square, Bethnal Green, N.E., or the Labour Exchange, Edgware-road, N.W.

A Local Government Board inquiry has been held by Mr. R. H. Bicknell, M.Inst.C.E., at Westbridge House, Stone, Staffs, relative to the application of the urban district council for sanction to borrow £3,764 for the purpose of carrying out a scheme of alterations and additions at the waterworks pumping-station. The proposed works have been designed by Mr. R. C. Frain, C.E., and are intended primarily as a stand-by to the existing works, and incidentally to increase the available supply. They will consist of a duplication of the existing pumping-engine, a borehole, engine house, engine, and pumping-main.





THE TOWERS AND SPIRES OF OXFORD VIEWED

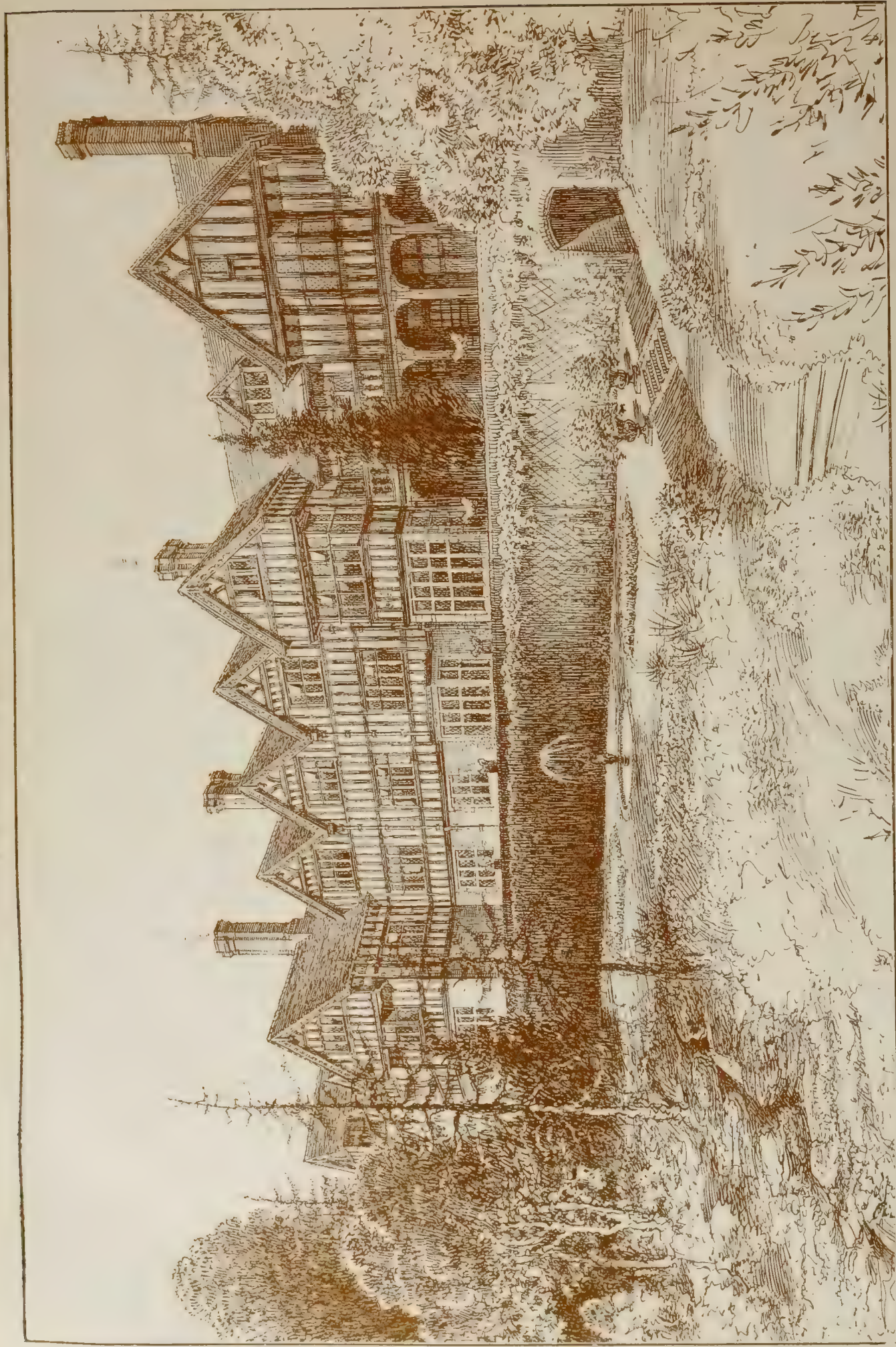
Reproduced from an Oil-colour Sketch made by



FROM THE ROOF OF THE SHELDONIAN THEATRE.
phot by Mr. ERNEST A. S. BENNEY, A.R.C.A.

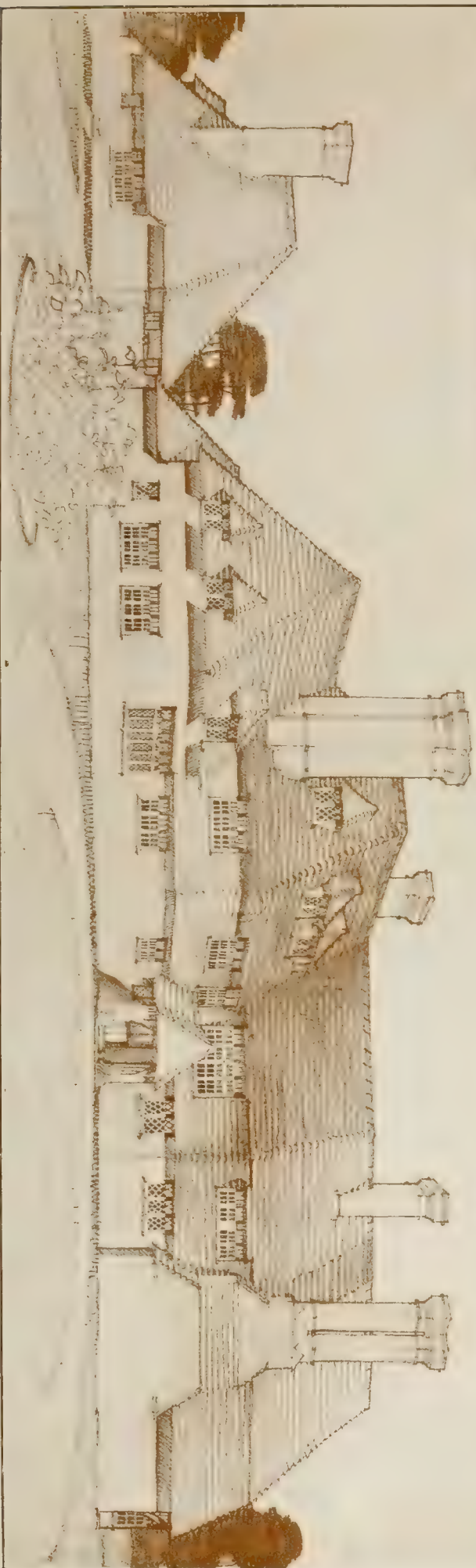
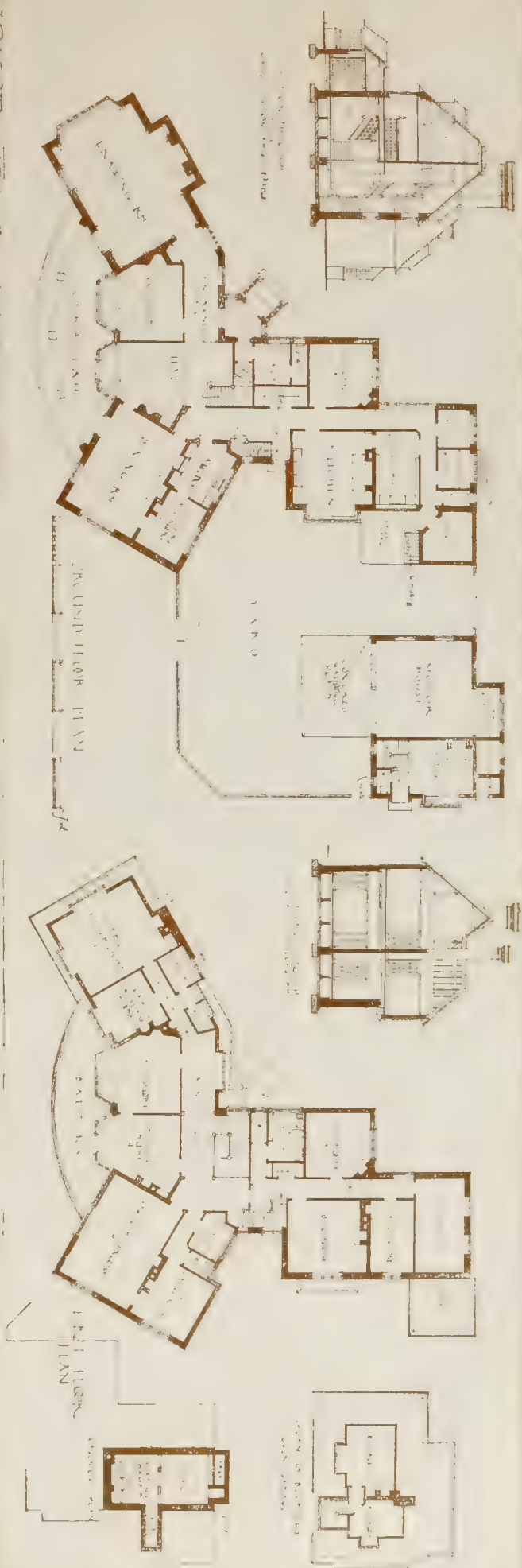




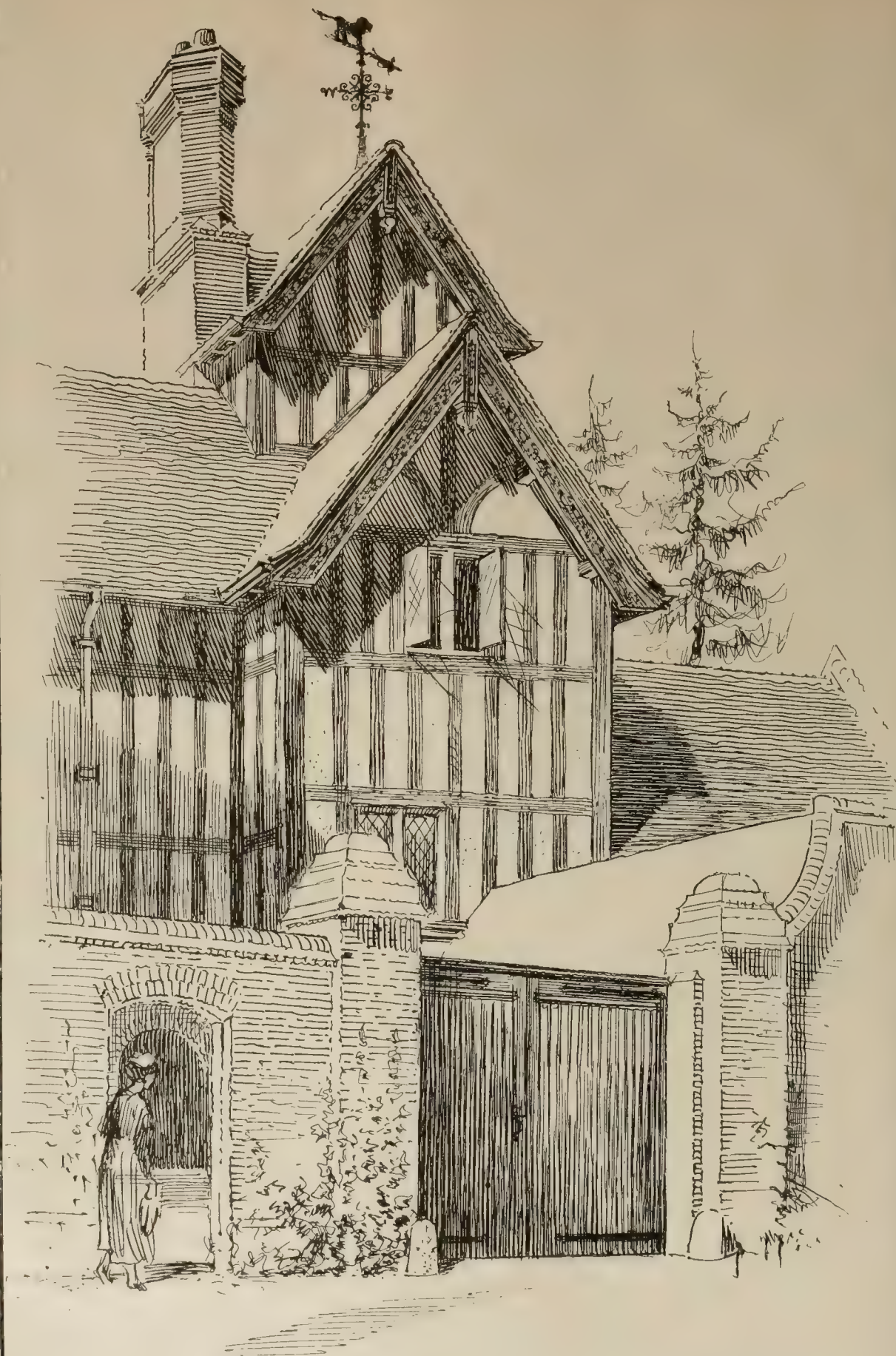


GARDEN FRONT OF "CARIAD," GORING-ON-THAMES, FOR THE EARL OF SHREWSBURY AND TALBOT, K.C.V.O.

Mr. W. T. WALKER, F.R.I.B.A., Architect.



HOUSE, TITLARK'S HILL, STANNINGDALE: ENTRANCE FRONT.—Messrs. TIBBS, MESSER, and POUTLER, Architects.



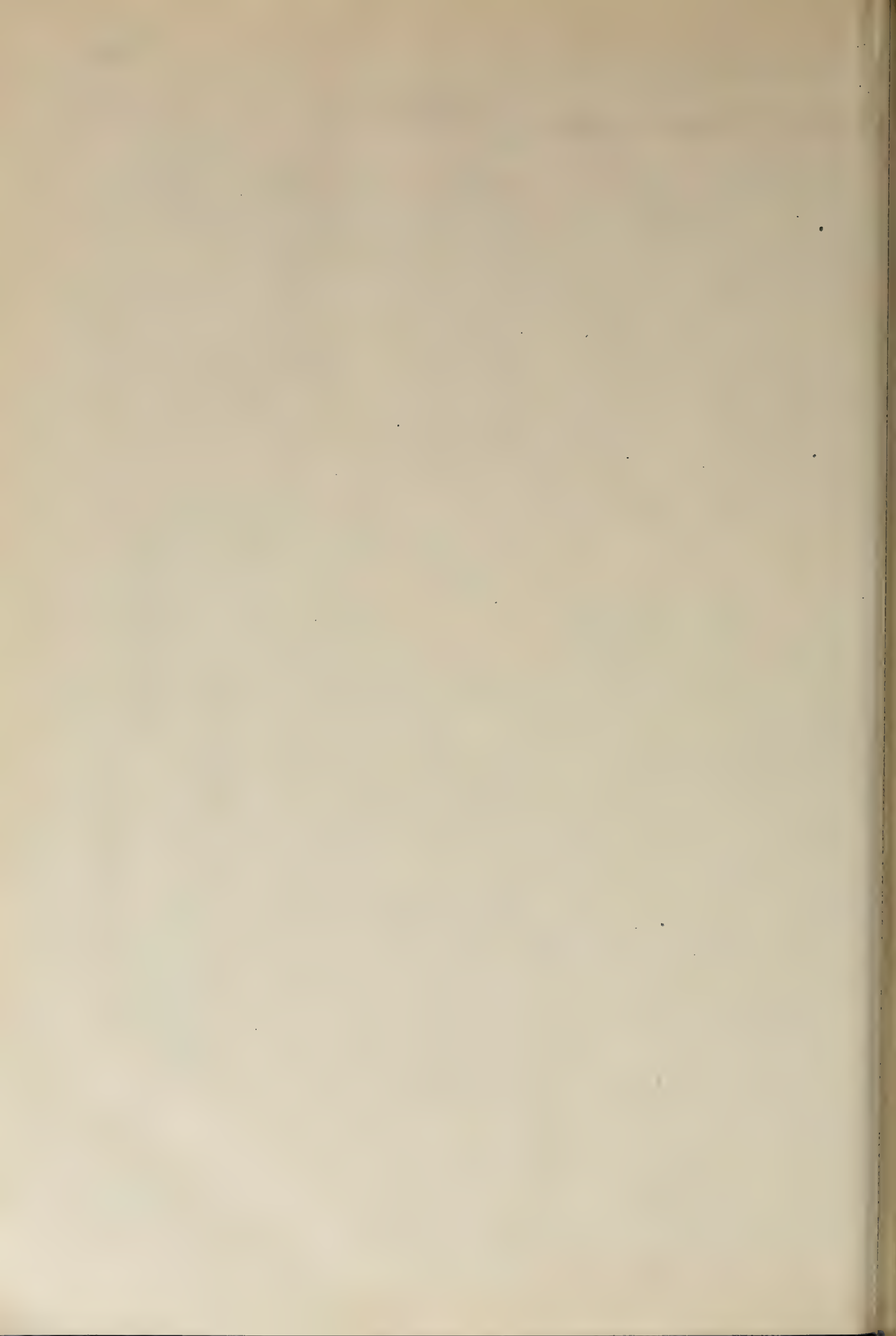
The Yard Gates

THE ENTRANCE LODGE, BOAT HOUSE, AND YARD GATES, "CARIAD," OR

MR. W. T. WALSH.



The Entrance Lodge



Building Intelligence.

JESMOND-ON-TYNE.—The new synagogue which has been erected in Eskdale-terrace, Jesmond, Newcastle, has been formally opened by Sir Stuart Samuel, Bart., M.P. The building, which is designed in the Byzantine style, provides accommodation for 320 persons in the synagogue proper, and has, in addition, two classrooms, convertible into one large room, ladies' retiring-room, robing-room, and caretakers' rooms. The entrance-hall gives access to cloak-room accommodation. Internally, the walls of the synagogue are finished a light cream colour with the barrel ceiling white. The whole of the furnishings and woodwork are of oak, finished a dark shade. Relief to the colour scheme is afforded by the stained-glass windows. The Ark in which the scrolls of the law are kept is placed on the raised "almemar" or rostrum at the eastern end of the building. Externally, the building is faced with red facing-bricks and stone dressings. The work has been carried out from designs and under the superintendence of Mr. Marcus K. Glass, architect, Newcastle. The general contractors were Messrs. Elliott Bros., of Jesmond.

ROCHDALE.—The Bishop of Manchester consecrated the new church of St. Aidan, which has been erected on a commanding site near the junction of Manchester-road and Bolton-road, Sudden, Rochdale, on Wednesday week. The building, which is in the Early English style, was designed by Mr. Temple-Moore, of London. It is of local stone in rubble work, with window and other dressings of Weldon stone. The tower at the west end has only been commenced. The windows are of the deeply-splayed lancet type. A five-light window occupies the east end. The aisles, of which the southern is the wider, extend the whole length of the church. The chancel is unusually spacious, and loftier than the nave. On the south of the chancel arcade there is a chapel with accommodation for 50 worshippers. The internal length is about 102ft., and the breadth 64ft.; and there is seating accommodation for 503 adults. An organ will later on occupy the gallery at the west end of the side chapel. An unusual feature of the church is the open-air pulpit projecting from a turret on the south side. The cost of the church has been £6,000, towards which £4,000 has already been raised.

Recent additions to the exhibition of prints in King Edward VII.'s Galleries include a selection of original lithographs by Mr. Albert Belleruche, and of etchings by Colonel Robert Jeff, R.E.

At Swansea on Wednesday, Dr. A. W. Lightmore, of the Local Government Board, held an inquiry respecting an application by the Swansea Rural District Council for sanction to borrow £20,500 for works of sewerage and sewage-disposal.

Mr. Edward Ellis, of Leeds, has retired from the position of Yorkshire district engineer to the Great Northern Railway Company, after forty years' service with the company. He has received letters of thanks and appreciation both from the directors of the company and the workmen he has controlled.

News was received at Wilm-blow on Monday of the death of Mr. B. K. Adams, chief engineer of the Government railway in Mauritius, as a result of injuries received in an accident on the railway. He was formerly an official on the Lancashire and Yorkshire Railway, and was a life prizeman of the Institution of Civil Engineers.

There were 126 applicants for the post of rough engineer at Stockton-on-Tees, and the following have been selected for a personal interview: Mr. G. H. Whitaker, chief assistant surveyor, Sunderland; Mr. H. R. Crabb, rough engineer, Pembroke; Mr. F. Wilkinson, deputy surveyor, Wimbeldon; Mr. G. F. Beaumont, deputy borough engineer, Wolverhampton; Mr. T. P. Frank, borough surveyor, work-on-Trent; and Mr. G. C. Mitchell, assistant borough engineer, Stockton. The salary is £500 a year, rising by £25 per annum increments to £700.

COMPETITIONS.

DONCASTER CORPORATION HOUSING COMPETITION. The Doncaster Corporation are taking steps to provide, in some measure, for the great shortage of houses in the town and district. One portion of their property, the Car House estate, is to be laid out on model lines. The plans were thrown open to competition, and the assessor, Mr. Patrick Crombie, of Liverpool, has just made his award. The first prize of £50 goes to Messrs. Ireland and Hanscomb, of West Ealing, for the best site plan; and the second and third prizes, of £30 and £20 respectively, are awarded to Mr. G. A. Boswell, of Glasgow, and Mr. J. S. Stout, of Whitehaven, for their housing plans in each case. The plans sent in numbered 108, and they are to be on view to the public in the Mansion House.

LIVERPOOL.—The competition plans for the Rathbone-street area where workmen's dwellings will be erected from the designs of Messrs. E. F. S. Biram, Licentiate R.I.B.A., and W. B. Fletcher, George-street, St. Helens, are to be on public view in the Walker Art Gallery, Brown-street, Liverpool, for a fortnight, closing on Thursday, the 22nd inst., between the hours of 10 a.m. and 6 p.m. We are promised the loan of a perspective view of the selected design. The awards were printed in our issue for March 26, with an abstract of the report of the referee, Mr. Henry Hartley, F.R.I.B.A. We have seen the plans chosen for the work and have no doubt as to their suitability and good architectural appropriateness in design.

L.C.C. SCHOOLS AT GREENWICH.—The London County Council Education Committee at their last meeting accepted a sub-committee's recommendation that Messrs. Wright and Chapman, of 38, Grainger-street West, Newcastle-on-Tyne, be employed as architects for the construction of new elementary school in Billingsgate-street, Greenwich. The assessor had placed their design first in the recent open competition, and it was illustrated in our issue of October 23, 1914. Messrs. Savage and Rowe, Mosley-street, Newcastle-on-Tyne, were appointed quantity surveyors for the work.

LUTON.—The date for sending in the plans to be submitted in the limited competition for the Girls' Secondary School at Luton has been postponed to the first of May. The Bedford County Council have not at present decided as to the appointment of a professional referee. The architects chosen to compete are:—Messrs. J. R. Brown and Son, Luton; Mr. Alfred W. S. Cross, V.P.R.I.B.A., London; Messrs. Hickton and Farmer, F.F.R.I.B.A., Walsall; Messrs. Buckland and Haywood-Farmer, F.F.R.I.B.A., Birmingham; Mr. Arnold Mitchell, F.R.I.B.A., London; Messrs. J. Alfred Gotch, F.R.I.B.A., and Saunders, Kettering; Messrs. Frankland and Deacon, Luton; and Messrs. Sharman and Archer, Wellingborough.

ST. HELENS.—The awards in connection with the competition at St. Helens for new police buildings and fire-station are still sub judice, so that no information can be made public in regard to the matter at present.

SOUTHEND-ON-SEA.—No decision has been come to with regard to the competitive designs submitted for the tuberculosis hospital at Southend-on-Sea.

News has been received at the Glasgow School of Art that Staff-Captain Eugene Boardman, Director of the Glasgow School of Architecture now with the French at the front, has received a "Citation à l'ordre du jour de la division," the English equivalent for which is, "Mentioned in his regiment for special services."

A point of importance in financial circles has been decided in the Chancery Division. Mr. Justice Sargant in the case of Mr. William Robson against the Premier Oil and Pipe Line, Ltd., held that alien enemies were not entitled to vote or exercise their right to vote by proxy in respect of shares held by them in English companies.

Correspondence.

QUICK DRYING CONCRETE USED BY THE GERMANS.

To the Editor of the BUILDING NEWS.

SIR,—Following upon your report of Mr. Hilaire Belloc's interesting lecture before the Architectural Association on "Artificial Permanent Defence" (and I note the BUILDING NEWS alone reports this crowded meeting in Tufton-street), I would like to ask the lecturer a pertinent question; or perhaps some expert "concretist" might be able to afford the information. Among the many surprises associated with German war undertaking during the present conflict, and incidental to the appearance of the famous howitzers which at the outset of hostilities so effectively silenced the Belgian forts, hitherto reckoned impregnable, comes a further discovery upon which the invading enemies almost equally pride themselves. I allude to the statement that Krupps have provided a new concrete said to harden in two days instead of taking a fortnight or more, according to the weather, as previously required. Such an accessory for the effective use of these monster artillery guns proved to be an absolute necessity, though military experts bear witness now that such big ordnance quickly rifles in use. However that may be, the immediate purpose of my inquiry is not concerned with the fighting, as such, or its objects. The Germans found solid and quickly-constructed platforms of concrete were essential for the mounting of these howitzers: hence the particular importance of the invention to them. Mr. Belloc did not, however, allude to this concrete, and my authority is Mr. Irvine S. Cobb, an American journalist who enjoyed the coign of vantage in the Quarters of the headquarters staff of the Germans on the hill at Laon. For ordinary building-work such quick-hardening concrete would make an enormous difference in countless cases. Some particulars would therefore be valuable to other architects besides myself.—I am, etc.,

BELLO FLAGRANTE.

Maundy Thursday, 1915.

Mr. I. Pickup has been appointed building inspector to the Burnley Corporation in succession to Mr. T. Cross, deceased.

The Croydon Corporation have requested Messrs Geo. T. Hine and H. Carter Pegg to prepare plans and specifications for the extension of the buildings in order to provide for another 200 patients at the Warlingham Mental Hospital.

At Saturday's meeting of Sutherland County Council at Golspie for the purpose of considering the appointment of a sanitary inspector for the county, there were fifteen applications for the post, and these were reduced to a short list of three, as follows: Mr. Horne, qualified sanitary inspector, Paisley; Mr. George Fraser, building contractor, Golspie; and Mr. Robert Moore, foreman mason for the Duke of Sutherland, Golspie. The final selection will be made at the May meeting of the council.

In the Civil Service Estimates there is an item of £250,000 for works and services to be carried out for the relief of unemployment. This is an entirely new item, and expenditure will be defrayed from this vote only in the event of a depression in trade of such a character as to call for the application of relief measures by the Government. The approval of the Treasury in every case will be obtained before any specific work is begun. The works undertaken will be such as would in any case be required for Government purposes in the course of the next few years.

At the monthly meeting of the Wallsend Town Council on Tuesday night the housing and town planning committee reported that they had received from Mr. E. Cratney, architect, an amended lay-out plan for 68 two-roomed houses, 136 three-roomed houses, 68 four-roomed houses, and 14 self-contained houses with a total accommodation for 286 tenants, and which gave a proportion of 18.75 houses and 37.75 tenants to the acre. Mr. Cratney stated that it had been necessary in some cases to reduce the width between the building frontages to 55ft. It was decided to approve the block plan, and to send a copy of Mr. Cratney's letter to each member of the committee.

LEGAL INTELLIGENCE.

RATING OF SEWERS.—In order to save the trouble and expense of going to law, it is understood that a compromise has been agreed to between the Select Vestry and the Corporation of Liverpool with regard to the rating of sewers. It was anticipated that the appeal to Quarter Sessions by the corporation v. the overseers against the parochial assessment would be carried to the House of Lords, whichever side won in the first instance. Hitherto the vestry authorities were willing to place the matter of amount before an arbitrator, but were unwilling to place the question of liability before such a tribunal. They are now prepared to concede both points, and also to accept the same basis of assessment for this year as the Toxteth and West Derby authorities. The corporation contend still that the principle of sewer-rating is entirely wrong; but, as in any case, win or lose, the ratepayers would be the sufferers, they look upon it as a matter of greater importance that money should be saved, and, without abating one jot of the principle, they are determined not to waste money on law at this critical period in the country's history. The only possible utility of a double reference to the House of Lords would have been the exposure of the present system of city government in Liverpool, which permits three distinct Poor-law administrations and as many as seventeen different rate-collecting authorities.

The Premier Palace Theatre in Dublin is approaching completion. It is being built from designs by Mr. Bertie Crewe, of London.

A Presbyterian church is about to be built at Cloughwater, near Ballymena, from plans by Mr. S. J. McFadden, of Queen-street, Coleraine.

The East District Committee of the Berwickshire County Council have agreed to increase the salary of their road surveyor by £50 per annum.

The Local Government Board have given their sanction to the borrowing by the urban district council of Bentley with Arksey of £2,660 for a housing scheme.

The Local Government Board have refused to sanction the application of the town council of Swansea for leave to borrow £121,000 for an extensive housing scheme.

Mr. J. G. Howard, assistant surveyor to the Berkhamsted Rural District Council, has been appointed surveyor and inspector to the Salcombe Urban District Council.

The death took place on Monday, at his residence, The Nest, Knowsley Park, Prescott, of Mr. J. Hornby, estate agent to Lord Derby, a position he had held for over twenty years, being successor to the late Mr. Hale. Mr. Hornby, who was sixty-one years of age, had only been ailing a few days.

The Ruislip-Northwood Urban District Council have adopted plans prepared by Messrs. A. and J. Soutar for a housing scheme, and an application will be made to the Local Government Board for sanction to a loan of £5,365 for the purchase of land and for building twenty-two houses.

Mr. Farquharson Minto, who for more than forty years was road surveyor to the Arbroath District Committee of the county of Forfar, died at his residence, Hillend-road, Arbroath, on Sunday, at the age of eighty-six. He was a native of Alford, Aberdeenshire, and a brother of the late Professor Minto, Aberdeen.

The death took place at Cheltenham on Tuesday of Mr. Charles Malvern, a well-known builder, who had reached his eightieth year. Mr. Malvern was a native of Tewkesbury, but had lived most of his life in Cheltenham, where he erected Rodney Hall, Swindon-road Wesleyan Chapel, the corporation electric-power station, the abattoir, and other buildings.

Mr. W. H. Winterbottom, of Abersech and London, yesterday (Thursday) formally presented the village of Abersech with an institute, well furnished, and embracing an assembly-room, a reading-room, and billiard-room. The building is lighted throughout with electricity, and attached to the institute is a tennis-ground. The institute has been given by Mr. Winterbottom in memory of his deceased son.

Under the direction of H.M. Office of Works, building operations are proceeding, night and day, in a portion of St. James's Park adjoining the railings on the south side of the Mall. The premises, which are to be completed in six weeks' time, are to serve as temporary offices for the staff, about a thousand in number, of the Accountants' Department of the War Office. The contractors are Messrs. Leshe and Co., of Kensington.

Our Office Table.

The "Contract Record" of Toronto, in referring to the nomination of Mr. Frank Darling, of the firm of Messrs. Darling and Pearson, of that city, as the Royal Gold Medallist of the R.I.B.A., mentions that Mr. Darling was born at Scarborough, near Toronto, in 1850. From Upper Canada College he proceeded to Trinity College School. After studying the elements of his profession in Canada, he went to England, in 1870, and continued under George Edmund Street and Sir Arthur Blomfield. He entered upon his professional career in Canada in 1875, and formed his present partnership some twenty years later. Among the works designed by Mr. Darling are the new General Hospital at Toronto, the C.P.R. office building, and the new head office building of the Dominion Bank, Toronto, the Canadian Bank of Commerce building, and the new office for the Sun Life Company in Montreal. "The materialisation of his designs is to be found in Newfoundland, in the Maritime Provinces, in the principal cities of Quebec and Ontario, in the prairie towns, and in Vancouver."

Mr. J. M. Gething, architect, of Stourbridge, has presented to the library of the Royal Institute of British Architects a copy of Elmes' "Life of Sir Christopher Wren," which he purchased at the sale of the contents of Wroxall Abbey nearly fifty years ago. It contains two pages of genealogy of the Wren family (ante and post Sir Christopher) in the handwriting of a lady, almost certainly that of the wife of Christopher Roberts Wren, and mother of the last Miss Wren, who married Mr. Chandos Hoskyns. It also contains two book-plates, one of them the arms and name Christopher Roberts Wren, and the other having the same arms and the wife's quartered, and the name Anne Wren. This latter book-plate was pasted over the former, covering it; and on its removal the under one was disclosed.

Some discoveries of great interest are announced in the 60th annual report of the Surrey Archaeological Society, to be presented at the meeting of the society to be held at Guildford on the 17th inst., under the presidency of Lord Farrer. At Compton a Roman villa, not of very extensive character, but containing many features of interest, was carefully excavated in the garden of Mrs. G. F. Watts, under the superintendence of Mr. Mill Stephenson, F.S.A.—At Merton, in the wall of a house which was being pulled down in the premises of Messrs. Liberty, discovery was made of an almost complete Norman arch, obviously a part of the Priory buildings. Steps were taken for the preservation of this valuable relic, and the council acknowledge the personal courtesy and interest of Sir Arthur Liberty in the matter. Further discoveries of prehistoric remains have been made at Weybridge, and at Wotton a number of bronze vessels, believed to be almost unique specimens of British water-clocks, were found.

The members of the Eskdale and Liddesdale Archaeological Society, and Mr. W. M. McKenzie, secretary, recently met at Hollows Bridge; Mr. G. H. Watson, principal architect of the Royal Commission on Ancient Monuments (Scotland), and Mr. W. Hyslop, builder, Langholm, were also present. The Society have carried out excavations at the south end of Hollows Bridge, with the object of deciding whether Caronbie Gilnochie Castle, the principal stronghold of the famous Border freebooter, Johnnie Armstrong, was situated there or not. An examination was made of the place and its surroundings. It has long been a question amongst antiquarians whether the castle stood at the end of the bridge or half a mile further up the river. The excavations just completed at Hollows Bridge have revealed a retaining wall, which, however, does not furnish proof of a satisfactory nature that a castle or inhabited tower had existed there. What might have been a dry moat was seen,

and calcined remains of different kinds have been dug up, but these also were insufficient to determine anything definite. Great numbers of dressed stones were found in a dyke not far off on Hollows Mill farm; but the experts present considered that from the way they were dressed they had been taken from some building of more recent date than a castle of the noted freebooter. One point against the site being that of Armstrong's Castle was that no mortar was found by the excavators.

A meeting of those interested in the preservation of the fine old mansion of Murrayfield House, Edinburgh, and the splendid trees surrounding it, has been held to consider what steps should be taken with a view to obtaining some modification of the proposed town-planning scheme, whereby the house itself and the bulk of the trees might be saved. The draft scheme provides for the continuance of Murrayfield-avenue directly northwards through the site of the house, which would entail its demolition, as well as the destruction of most of the fine trees in the grounds. Lord Strathclyde presided, remarking that the local authorities were by no means unsympathetic, however, and that they did not require to be converted. Mr. Henry F. Kerr, A.R.I.B.A., gave an interesting explanation of the architectural features of the house, illustrated by plans which he had prepared. As a result of careful investigations, Mr. Kerr was satisfied that the house belonged to three distinct periods, covering the past three centuries, and that it, therefore, formed an exceptionally good illustration of Scottish domestic architecture. The earliest portion formed a "keep," occupying the eastern part of the main building, and dating from the beginning of the seventeenth century. This keep was incorporated in the main building, which seems to have been built about a hundred years later, and this in turn was altered and brought more in accord with later domestic requirements by the enlargement of the windows, the addition of the central pediment, and various other internal and external alterations. The last addition was the east wing, containing the fine drawing-room in Adams feeling, built about the beginning of the nineteenth century. On the motion of Lord Strathclyde, Mr. Kerr was cordially thanked for his interesting account, and a committee was appointed to watch over the matter, and to take any steps which might seem advisable. Mr. G. A. Harrison Warrender, was appointed as secretary.

The Civil Service estimates just published show that £4,062,742 will be required during the year 1915-16 for public works and buildings. This figure shows a net increase of £317,535 compared with 1914-15. Royal Palaces account for £62,250, £27,000 of which is allocated to palaces in his Majesty's occupation. A sum of £121,400—a net decrease of £1,800—is required to defray the expenses of Royal parks and pleasure gardens. The £74,000 set aside for the Houses of Parliament represents an addition of £7,300. New works and alterations will claim only £4,140, as compared with £15,400 last year. There is as well a drop of £4,395 for maintenance and repairs, but the sum of £10,180, necessary for maintenance of approaches and gardens, means an increase under this heading of £8,025. The provision of wood-block paving to Old Palace Yard and St. Margaret-street—£8,800—solely accounts for this extra expenditure. Under the heading "Art and Science Buildings" there is a falling off of estimated expenditure of £9,400, and the diplomatic and consular buildings will take £52,610 less. Another £12,600 is required for insurance and labour exchange premises. Woolwich Arsenal housing scheme will cost £6,000, and £8,870 is asked for further structural alterations at the National Gallery to remove or minimise risks from fire. The Government contribution to the cost of the improvement of the approach to the Mall is put at £32,000.

Less land was acquired for small holdings by County Councils in 1914, and the reduction from 24,493 acres the previous year to

16,537 acres is attributed by the Board of Agriculture, in their report, entirely to the war. The present position is that no loans are available from the Public Works Loan Commissioners in existing circumstances in respect of any fresh purchases of land for small holdings, but if councils are prepared to find the purchase-money themselves from the county fund, or from capital moneys under their control, the Board will be prepared to approve such schemes, and the Local Government Board will give the necessary sanction, provided that the purchase-money in any one case does not exceed £2,500. Apart from this, the only means by which councils can supply the needs of their unsatisfied applicants is by acquiring land on lease or by means of a perpetual rent charge. The total quantity of land acquired by County Councils since the Act came into operation is 195,490 acres.

The Lord Mayor of Birmingham (Alderman Bowater) has consulted a number of the leading citizens as to whether the time is opportune for promoting a memorial to the late Mr. Joseph Chamberlain. It was unanimously recognised that steps should be taken as soon as possible to commemorate Mr. Chamberlain's public services, but it was felt that any scheme proposed would be more successful if an appeal for subscriptions were made at a later date. The Lord Mayor, therefore, does not propose to move in the matter at present.

A second edition of that most useful handbook, "Practical Gilding, Bronzing, Lacquering, and Glass Embossing," by Fred Scott Mitchell, is published by the Trade Papers Publishing Co., Ltd., 365, Birkbeck Bank Chambers, W.C., at 3s. The additional chapters on Glass Embossing, Gesso and Relief Decoration, Mosaic Work, etc., together with an up-to-date scale of charges for all kinds of work, will materially enhance the well-deserved and wide circulation the manual has enjoyed.

"Structural Steel Drafting, and Elementary Design," by Chas. D. Conklin, junior (London: Chapman and Hall, Ltd., 10s. 6d.), is a useful and practical treatise by a well-known American teacher. The introductory chapters will be found valuable by the student, and the succeeding pages cover successively rivets and riveting, beam and column detailing, wall-girders and columns, roofs, girder bridges, highway bridges, railway spans, and hip and valley details. The general appendix gives a good general specification for steel railway bridges.

"Handrailing For Geometrical Staircases," by W. A. Scott (London: Whittaker and Co., 4, White Hart-street, E.C., 2s.), is a practical exposition of one of the most difficult tasks the joiner is called upon to perform. There is, of course, no dearth of books about it, but the best are dear and others deal only with particular systems. Mr. Scott has produced a handy manual that will help students and the practical man as well—provided, of course, either is familiar with the setting out and construction of ordinary newel stairs.

Four Chapters of the New York State of the American Institute of Architects have endorsed the proposed law for the registration of architects under the regents, and commended the work of Mr. Pilcher, the State Architect. The board of directors and committee on public improvements was instructed to co-operate in the work of preserving historic monuments and buildings. The following officers have been elected in the New York State Chapter for the coming year: President, A. L. Brockway, Syracuse; vice-president, Robert D. Kohn, New York; secretary-treasurer, F. H. Quinby, Brooklyn; directors, J. M. Hewlett, Brooklyn; H. P. Holland, Buffalo; Leon Stern, Rochester; T. L. Ackerman, New York; E. S. Gordon, Rochester; George Cary, Buffalo; R. M. Hunt, New York; William Barmister, Brooklyn.

The Architectural League of New York have decided to establish a medal of honour for architecture, to be given by the league each year at its annual exhibition. The

details of the method of award are now being worked out by a special committee appointed by the league to consider the matter, consisting of Mr. Edwin H. Blashfield, Mr. Isidore Konti, Mr. Calvin Kiessling, under the chairmanship of the president of the league, Mr. Cass Gilbert. It is the purpose of the committee to make the conditions comprehensive in character, so that the medal may be said to represent the true consensus of artistic opinion in America. The medal will be awarded each year by a committee on which there will be members of the different professions allied to architecture, as well as men who are practising architects.

The report of the directors of the Val de Travers Asphalt Paving Company for 1914 states that, after making provision for depreciation, etc., the net profits are £19,265, which, with the sum brought forward, amount to £26,860. From this has to be deducted the interest on the debenture stock, amounting to £6,900. An interim dividend of 6d. per share was paid in October last; a further dividend of 9d. per share, free of income-tax, is now recommended, making together 1s. 3d. per share, or 6½ per cent., for the year, and leaving to be carried forward £7,710.

Work is proceeding in connection with the construction of Australia's capital city, Canberra. Extensive sewage-farms are being formed three miles outside the city boundary. A site has been selected for the construction of a dam to lock the water from the Queanbeyan River, in order to force a continuous stream into the Molonglo, which flows through the Federal capital territory. The cost of the dam will be about £100,000. On the Otter River, twenty miles from Queanbeyan, a dam is being constructed to store water for the supply of the capital. From this dam the water will run in pipes through a tunnel cut in the hill to a reservoir at Red Hill. The electric-power plant, which will generate power for lighting and industrial purposes in the city, and is to cost £60,000, is approaching completion. Hundreds of thousands of bricks are being produced at the State-owned brickworks on the site.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY (To-morrow).—Institution of Municipal and County Engineers. East Midland District Meeting, Town Hall, Loughborough. 2.15 p.m.

MONDAY.—Surveyors' Institution. "The Report of the Land Inquiry Committee on Housing," by C. S. Joseph and R. Strachan Gardiner. 8 p.m.

TUESDAY.—Society of Engineers. "Main Roads, Past and Present," by Frank Grove, Assistant County Surveyor of Surrey. 7.30 p.m.

WEDNESDAY.—Society of Architects. Concert at the King's Hall, Holborn Restaurant. (Tickets 2s. 6d. each. Morning Dress.) 8 p.m.

Institute of Sanitary Engineers. "Corrosion of Iron and Steel Pipes," by W. J. E. Binnie, M.I.C.E. Caxton Hall. 8 p.m.

Royal Society of Arts. "The Industrial Use of Radium," by T. Thome Baker. 8 p.m.

THURSDAY.—Royal Society of Arts. "Basra and the Shatt-ul-Arab," by Percival London. 5 p.m.

Society of Architects. "Artificial Lighting in Relation to Architectural Effects," by Stephen D. Chalmers, M.A., of the Northampton Institute. 7.30 p.m.

Camberwell School of Arts and Crafts, Peckham-road, S.E. "The Tombs of Westminster Abbey," by Professor W. R. Lethaby, F.R.I.B.A. 8 p.m.

Sheffield Society of Architects and Surveyors. Annual Meeting.

FRIDAY.—Town Planning Institute. "Replanning and Re-development in Existing Centres," by W. T. Lancashire, M.I.C.E., and H. V. Lancaster, F.R.I.B.A., 92, Victoria-street, S.W. 8 p.m.

General George Warren Walker, Colonel Commandant, Royal Engineers, celebrated his ninety-seventh birthday at Bath on Tuesday. He is in good health. General Walker entered the Army in 1842, and was promoted to General in 1885. He was formerly Chief Engineer and Public Works Secretary in Madras.

Trade News.

WAGES MOVEMENTS.

NEWCASTLE-ON-TYNE PLUMBERS.—The Newcastle operative plumbers, who came out on strike a week ago for an increase of wages, resumed work on Tuesday. The dispute had been referred to the Committee on Production, who appointed Mr. Alexander Wilkie, M.P., secretary of the National Shipwrights' Society, and Mr. John Hill, secretary of the National Boilermakers' Society, to interview the men and state the inadvisability of industrial disputes at the present juncture of national affairs. The Plumbers' Association issued a statement denying that the dispute affected the production of war munitions or work in hospitals or in huts. They offered to release five men employed on such work; but the masters insisted that all should resume or none.

Mr. R. H. Bicknell held a Local Government Board inquiry at Hessele on Wednesday as to an application from the urban district council for sanction to borrow £7,200 for road-widening and improvements.

Mr. E. C. P. Monson, F.R.I.B.A., President of the Society of Architects, who is well known in Masonic circles as a P.P.G. Supt. Works of Buckinghamshire, etc., has been advanced to Grand Lodge rank as Assistant G. Supt. of Works.

The Lord Mayor will open on Tuesday next, at three o'clock, at the Guildhall Art Gallery, the Arts in War Time Exhibition of Pictures and Sculpture, which is being held in the interests of the Professional Classes War Relief Council.

A scheme has been prepared by the borough surveyor of Hertford, Mr. J. H. Jevons, for the construction of a road to connect Port Vale with North-road and the new Great Northern station. The estimated cost is £2,450, towards which the railway company will contribute £1,000.

The Masonic Hall in Cooper-street, Manchester, has long been inadequate for requirements, and a new hall is to be built in Bridge-street for the use of Masonic lodges in Manchester and East Lancashire. The architect is Mr. James B. Broadbent, of Cooper-street, Manchester.

The health committee of the corporation of Hull have under consideration a scheme for building a garden village on land between the Hessele-road railway-crossing and Pickering Park. Over seventy acres are available, and it is proposed, if the land can be purchased, to erect ten houses per acre.

The new buildings near the Victoria Rooms, Bristol, erected as the headquarters of the city branch of the Colonial Institute, are expected to be opened by Earl Grey on May 18. The premises have been erected from designs by Mr. Norman G. Bridgman, A.R.I.B.A., of Torquay, and were illustrated in our issue of August 8, 1913.

The rural district council of Flaxton, near York, have under consideration a report by Messrs. Fairbank and Sons, civil engineers, as to a joint water scheme for the parishes of Rawcliffe, Skelton, and Shipton. The estimated cost is £2,973 3s. 8d. for the joint scheme, and for the parishes of Rawcliffe and Skelton only, £1,792 11s. 6d.

The new Central Board School at Kilbirnie was formally opened on Saturday afternoon. The school occupies a level site fronting the turnpike-road, opposite the parish church, midway between Kilbirnie and Glengarnock. The buildings are of one story, the classrooms being grouped around a central hall which is 48ft. by 29ft. The cost has been about £8,000.

The general purposes committee of the City Corporation, in a report on the Mansion House interior, asks that, in view of the rejoicings which the end of the war will bring, the Egyptian Hall may be redecorated at a cost estimated at £3,120; the state drawing rooms, £700; the old ballroom, £1,050; three state bedrooms, £150; Venetian parlour, £165; morning-rooms, £560—total, £5,745.

Mr. A. E. Newman, who has just died at Winchester, was a well-known sculptor and monumental mason, who designed and erected many of the memorials in Winchester Cathedral. His grandfather, who came of an old New Forest stock, was surveyor to the city council of Winchester; and his father, who was a Winchester tradesman, did a great deal of the carved work on the Houses of Parliament.

TIMBER.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

		Per standard.			
Yellow Pine Deals, 1st quality.....	£55	0	0	to £57	0
" 2nd	43	0	0	" 45	0
White Deals: First	22	0	0	" 24	0
Seconds	20	0	0	" 21	0
U.S. Yellow Planks, Deals, and Battens	10	10	0	" 11	10
				Per cubic foot.	
Oak: Austrian Wainscot	£0	10	6	to £0	12
Teak: Burmese, per load, 50ft.	28	0	0	" 34	0
Teak: Java, per load, 50ft.	24	0	0	" 27	0

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£8 10 0	to £8 13 6
Wrought-Iron Girder Plates	8 15 0	10 0 0
Steel Girder Plates	8 17 6	9 17 6
Bar Iron, good Stuffs.....	6 5 0	8 10 0
Do., Lowmoor, Flat, Round, or Square	22 0 0	0 0 0
Do., Welsh	5 15 0	5 17 0
Boiler Plates, Iron—		
South Stuffs	8 0 0	8 15 0
Best Sredshill	9 0 0	9 10 0
Angles 10s., Tees 20s. per ton extra.		
Builders' Hoop Iron, for bonding, &c., extra.	£8 15s.	to £9
Ditto galvanised, £14 to £15 10s. per ton.		
Galvanised Corrugated Sheet Iron—		
	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 10 0	14 0 0

	Per ton.	Per ton.
Cast-Iron Columns	\$6 17 6 to	\$8 10 "
Cast-Iron Stanchions	6 17 6 "	8 10 "
Roller-Iron Fencing Wire	8 5 0 "	8 10 "
Roller-Steel Fencing Wire	7 5 0 "	7 10 "
Cast-Iron Sash Weights	8 15 0 "	9 5 0 "
Cut Floor Brads	10 15 0 "	6 0 "
Corrugated Iron, 24 gauge	16 0 0 "	—
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14 5 0 "	—

B.B. Drawn Telegraph Wire, Galvanised—					
0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—		
3in. diameter	£6 15 0	to £7 2 6
4in. to 6in.	6 10 0	„ 6 12 6
7in. to 24in. (all sizes) ..	6 17 6	„ 7 2 6
[Coated with composition, 5s. 0d. per ton extra.		
turned and bored joints 5s. per ton extra.]		

Pig Iron—	Per ton.
Cold Blast, Lillieshall	80s. 0d. to 127s. 6d.
Hot Blast, ditto.....	87s. 0d. „ 97s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.).—		
Gas-Tubes.....	72½	p.c.
Water-Tubes.....	66½	10
Steam-Tubes.....	65	10
Galvanised Gas-Tubes.....	60	10
Galvanised Water-Tubes.....	56½	10
Galvanised Steam-Tubes.....	50	10

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	*438 0 0	0
Country	*29 0 0	—
Lead Barrel Pipe, Town	*29 0 0	—
Country	*30 0 0	—
Lead Pipe, Tinned inside, Town	*30 0 0	—
Country	*31 0 0	—
Lead Pipe, Tinned inside and outside	Town	*33 0 0
Country	*34 0 0	—
Composition Gas-Pipe, Town	*31 0 0	—
Country	*32 0 0	—
Lead Soil-pipe (upto 4in.) Town	*31 0 0	—
Country	*32 0 0	—
{Over 4in. £1 per ton extra.}		
Lead, Common Brands	17 17 6	£18 12 6
Lead Shot, in 28lb. bags	24 15 0	0
Copper Sheets, sheathing & rods	90 0 0	90 10 0
Copper, British Cake and Ingot	76 0 0	77 0 0
Tin, English Ingots	175 0 0	177 0 0
Do., Bars	176 0 0	178 0 0
Pig Lead, in lowt. Pigs (Town)	19 2 6	20 2 6
Sheet Lead, Town	*27 10 0	—
Country	*28 10 0	—
Genuine White Lead	31 0 0	—
Refined Red Lead	32 0 0	—
Sheet Zinc	73 0 0	—
Old Lead, against account	22 0 0	—
Tin	9 10 0	—
Cut nails (per cwt. basis, ordinary brand)	0 13 3	—
* For 5 cwt. lots and upwards.		

LATES.

	in.	in.	£	s.	d.	per 1,000 of 1,200 at r. stn.
Blue Portmadoc ..	20	10	12	6		
" "	16	8	6	12	6	
Blue Bangor.....	20	10	13	2	6	
" "	20	12	13	17	6	" "
First quality	20	10	13	0	0	" "
" "	20	12	13	15	0	" "
" "	16	8	7	5	0	" "
Eureka unfading green	20	10	15	17	6	" "
" "	20	12	18	7	6	" "
" "	18	10	13	5	0	" "
" "	16	8	10	5	0	" "
Permanent Green ..	20	10	11	12	6	" "
" "	18	10	9	12	6	" "
" "	16	8	6	13	6	" "

BRICKS.

(All prices net.)

First Hard Stocks.....	£1 15 0	per 1,000	alongside, in
Second Hard Stocks	1 11 0	"	" [river.
Mild Stocks	1 9 0	"	"
Picked Stocks for			delivered
Facings	2 5 0	"	at rly. stn.
Flettons	1 14 0	"	"
Pressed Wire Cuts.....	1 18 0	"	"
Red Wire Cuts.....	1 14 0	"	"
Best Fareham Red	3 12 0	"	"
Best Red Pressed			"
Raubon Facing ...	5 0 0	"	"
Best Blue Pressed			"
Staffordshire	3 15 0	"	"
Ditto Bullnose	4 0 0	"	"
Best Stourbridge			"
Firebricks	4 0 0	"	"
2½ in. Best Red Ac-			{ Net, delivered in
crrington Plastic	4 10 6	"	full truck loads
Facing Bricks			in London.
3½" Acrrington Best Red Plastic Facing per 1,000			
Bricks	£2 10 0		
3½" ditto Second Best Plastic ditto	2 2 6		
Ditto Ordinary Secondary Bricks	1 11 3		
Ditto Plastic Engineering Bricks	1 17 6		
Sewer Arch Brick not more than 3½ in			
thickest part	2 0 0		
3½" Chimney Bricks fit for outside work ...	2 6 0		
3½" ditto ditto through and through	2 0 0		
3½" Beaded, Ovolo and Bevel Jamb; Octa-			
gons; 2½" and 1½" radius Bullnoses; Stock			
patterns	3 7 6		
Acrrington 4½ Bricks, 9" x 2 course deep, each 0	0 6 6		
Ditto ditto 9" x 1 course	0 0 0		

GLAZED BRICKS.

HARD GLAZES (PER 1,000)

White, Ivory, and Salt Glazed. Best. £12 7 6	Second. £10 17 6	Buff, Cream, Other & Bronze Colours. £13 17 6	Best. £17 17 6	Second Colours. £12 7 6
Stretchers— 11 17 6	10 7 6	13 7 6	17 17 6	11 17 6
Quoins, Bullnose, and 15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers— 17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers— 14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square— 18 17 6	17 17 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square— 19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints— 17 7 6	15 7 6	21 17 6	24 7 6	17 7 6
Plinth and Half-gird Bricks, Stretchers and Headers— 5d. each	4d. each	6d. each	6d. each	5d. each
Double Bullnose, Round Ends, Bullnose Stops— 5d. each	4d. each	6d. each	6d. each	5d. each
Rounded Internal Angles— 4d. each	3d. each	5d. each	5d. each	4d. each

MOULDED BRICKS.

Stretchers and Headers—				
8d. each	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—				
1/3 each	1/2 each	1/3 each	1/2 each	1/2 each
Sill Bullnose, Stretchers, and Headers—				
5d. each	4d. each	6d. each	6d. each	5d. each
Majolica or Soft Glazed Stretchers and Headers				Per 1,000
.....				£23 17 6
" " Quoins and Bullnose.....				27 17 6
Compass bricks, circular and arch bricks			Not	
Cost single radius £6 per 1,000 over above list for the respective kinds and colours			exceed- ing 9in.	
Canter arch bricks, any kind or colour,			by 4 1/2 in.	
1s. 2d. each.....			by 2 1/2 in.	
Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.				
* These prices are carriage paid in full truck loads to London Stations.				
Thames Sand	s. d.			
	7	6	per yard, delivered	
Pit Sand	7	0	"	"
Thames Ballast	6	0	"	"

Best Portland Cement.....	36	0 to 41	s. d. Per ton, 0 delivered
Ground Blue Lias Lime.....	21	C per ton delivered	

Exclusive of charge for sacks.

	s.	d.	s.	d.	Per yard,
Grey Stone Lime	13	6	to 14	0	delivered,
Stourbridge Fireclay in sacks	27s.	0d.	per ton at		
railway station.					

STONE.*

Red Mansfield, in blocks.....	per foot cube	£0	2	4
Darley Dale, ditto	"	"	0	2 3
Red Corsehill, ditto	"	"	0	2 2
Clooseburn Red Freestone, ditto	"	"	0	1 0
Ancoaster ditto	"	"	0	1 10
Greenhill, ditto	"	"	0	1 10
Beer, ditto	"	"	0	1 6
Chilmark, ditto (in truck at Nine Elms)	"	"	0	1 10 4
Hard York, ditto	"	"	0	2 0
Do. do. 6in. sawn both sides, landings, random sizes.....	per foot sup.	£0	2	8
Do. do. 3in. slab sawn two sides, random sizes	"	"	0	1 3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	£ s. d.
Ditto, ditto, Nine Elms Depot	"	0 1 7 1/2
Beer Stone, delivered on rail at Seaton Station	"	0 1 1
Ditto, delivered at Nine Elms Station	"	0 1 7 1/2
Portland Stone, in random blocks of 20ft. average:-		
Delivered on road waggons	Brown	White
at Paddington Depot,	White Bed.	Base Bed.
Nine Elms Depot, or	Per foot cube.	
Pimlico Wharf	... £0 3 3	... £0 2 3 1/2

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles.....	43	0	per 1000 ry.sn.
Hip and Valley tiles.....	3	7	per doz.
Broseley tiles.....	50	0	per 1000
Ornamental tiles.....	52	6	"
Hip and Valley tiles.....	4	0	per doz.
Rusbon red, brown, or brindled ditto (Edwards).....	57	6	per 1000
Ornamental ditto.....	60	0	"
Hip tiles.....	4	0	per doz.
Valley tiles.....	3	0	"
Selected " Perfecta " roofing tiles : Plain tiles (Peake's)...	46	0	per 1000
Ornamental ditto.....	48	6	"
Hip tiles.....	3	10	per doz.
Valley tiles.....	3	4	"
" Rosemary " brand plain tiles.....	48	0	per 1000
Ornamental tiles.....	50	0	"
Hip tiles.....	4	0	per doz.
Valley tiles.....	3	8	"
Staffordshire (Hanley) Reds or brindled tiles.....	43	6	per 1000
Hand-made sand-faced.....	45	0	"
Hip tiles.....	4	0	per doz.
Valley tiles.....	3	6	"
Hartshill " brand plain tiles, sand-faced.....	45	0	per 1000
Pressed.....	42	6	"
Ornamental ditto.....	47	6	"
Hip tiles.....	4	0	per doz.
Valley tiles.....	3	0	"

OILS.

Rapeseed, English pale, per tun	\$28 15 0	to \$39 5 0
Ditto, brown	26 15 0	27 5 0
Cottonseed, refined	29 0 0	30 0 0
Olive, Spanish	39 10 0	40 0 0
Seal, pale	21 0 0	21 10 0
Cocanut, Cochín	46 0 0	46 10 0
Ditto, Ceylon	42 10 0	43 0 0
Ditto, Mauritius	42 10 0	43 0 0
Palm, Lagos	32 5 0	33 5 0
Ditto, Nut Kernel	35 0 0	35 10 0
Oleine	17 5 0	19 5 0
Sperm	30 0 0	31 0 0
Lubricating, U.S. per gal.	0 7 0	0 8 0
Petroleum, refined	0 6 3	0 6 3
Tar, Stockholm per barrel	1 6 0	1 10 0
Ditto, Archangel	0 19 6	1 0 0
Linseed Oil per gal.	0 3 4	—
Baltic Oil	0 3 8	—
Turpentine	0 3 4	—
Putty Genuine Linseed	—	—
Oil per cwt.	0 10 0	—
Pure Linseed Oil	—	—
"Stority" Brand	0 9 0	—

GLASS (IN CRATES)

English Sheet Glass :	15oz.	21oz.	26oz.	32oz.
Fourths	5d.	6d.	6½d.	7½d.
Thirds	6d.	6½d.	7d.	8½d.
Fluted Sheet	5d.	6d.	—	—
Hartley's English Rolled Plate	½in.	¾in.	1in.	1½in.
	3d.	3½d.	4d.	4½d.
		White.	Tinted.	
Figured Rolled and Repoussée	5d.	6d.		

VARNISHES, &c.

Fine Pale Oak Varnish	£0 8	6
Pale Copal Oak	0	10
Superfine Pale Elastic Oak	0	13
Fine Extra Hard Church Oak	0	10
Superfine Hard-drying Oak, for seals of churches.....	0	14
Fine Elastic Carriage	0	12
Superfine Pale Elastic Carriage	0	13
Fine Pale Maple	0	10
Finest Pale Durable Copal	0	15
Extra Fine French Oil	0	1
Eggshell Flating Varnish	0	18
White Copal Varnish	1	9
Extra Pale Paper	0	13
Best Japan Gold Size	0	10
Best Black Japan	0	16
Oak and Mahogany Stain	0	9
Brunswick Black	0	8
Berlin Black	0	16
Knottin'	0	10
French and Brush Polish	0	10

Mr. Arthur G. Webster, clerk of works, Kirkcaldy, has been appointed sanitary inspector and burgh surveyor of Kinghorn.

The foundation-stone has been laid of new Sunday schools about to be added to Castle Green Congregational Church, Greenbank, Bristol. Mr W. H. Taylor, of Bristol, is the architect, and Mr. M. F. Chowry, of the same city, the builder.

The town council of Evesham have postponed till their August meeting consideration of a proposal to borrow £1,275 for the erection of fifty-two working-class dwellings on the council's land adjoining King's-road, Bengeworth, and the provision of roads. The council purchased sufficient land to build 150 houses on, but they have proposed to build only a third of that number to commence with.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House

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OUR ILLUSTRATIONS.

New Municipal Buildings, Karachi, India, now in course of erection. View, plans, and detail. Mr. James Cumming Wynnes, F.R.I.B.A., Architect, Edinburgh.

"Islet," Maidenhead. The Entrance Front, Fireplace in the Saloon, and view of Hall, with plan. Mr. Ernest Flint, F.R.I.B.A., Architect.

Garage and Offices at Avonmouth, for the Bristol Tramway and Garage Co., Ltd. View and plan. Mr. W. H. Watkins, F.R.I.B.A., Architect.

Carnegie Library, Didsbury, Manchester. View, section, and plan. Mr. Henry Price, City Architect, Manchester.

URBAN AND RURAL HOUSING.

The two papers read at the Surveyors' Institution on Monday night, dealing with that portion of the Land Enquiry Commission's Report relating to Housing, were valuable summaries of facts which too many well-meaning reformers ignore. Mr. C. S. Joseph's well-known experience in dealing with what is probably the most difficult problem of all in connection with urban housing for those who must live near their work, and for whose benefit sites must be found, when, owing to the commercialisation of the central districts the available area is constantly diminishing, of course, confirms the conclusions we have many times drawn during the last fifteen or twenty years. Added to this, we all know, of course, that the increased cost of labour and materials during that period has, with very few exceptions, practically driven private enterprise out of the field. Public authorities and companies have done much; but the supply still falls short of the demand. We entirely agree with Mr. Joseph that the alleged increase in the price of land indicated in the Report is really not so serious as is made out, and that his figures prove this. That there is difficulty in obtaining cleared sites in crowded central districts is perfectly true; but, as we have repeatedly pointed out, there are large areas developed nearly a century ago, covered by obsolete buildings, with large and almost always neglected gardens, which accommodate very few people, generally of an inferior class to that for which the houses were erected, and which are sources of loss to their owners, and of anxiety to the local authorities. In many districts, if those accustomed to such negotiations are employed, such property can be acquired at very little more than the cost of cleared land, and at a price which would enable a company or local authority to house five times as many people, at least, at rents within the means of the poorest, and with a fair return on the capital invested. Rates, of course, are the great hindrance. Their portentous increase during the past ten years has necessitated the abandonment of many urban housing schemes. How this difficulty is to be met it is indeed hard to say; but it will have to be met in the near future if urban workers are to be housed in proximity to their work.

The Land Enquiry Commission, it will be remembered, starts its proposed remedies with a recommendation that local authorities shall make a complete survey of their districts, with a view to preparing rehousing schemes. There is no need—in London, at any rate, to wait for Parliament for authority to make such surveys. In spite of the objections taken by interested obstructionists to Lord Isling-

ton's endeavour to introduce compulsory inspection every five years into the Bill of 1909, the Act did embody a provision for systematic inspection "from time to time," with a view to ascertaining whether any dwelling-house was in a state so dangerous or injurious to health as to be unfit for habitation. We entirely agree with Mr. Joseph that we rather want local authorities compelled to use their present powers, than fresh Parliamentary action, especially of the vague sort just instanced. Has anybody, for instance, yet heard of a case where the Insurance Commissioners, as by Section 63 of the National Insurance Act, 1911, they are empowered to do, may recover from a local authority any increased payments due to bad housing conditions, if it can be proved that in the locality there is at least 10 per cent. more sickness than is normally the case? We also endorse Mr. Joseph's opinion that the Committee's recommendation by way of mitigation of the present closing order procedure, that insanitary property should "be improved and adapted to modern conditions" is altogether an injudicious one. This cheeseparing policy simply prolongs the bad lives of bad houses, instead of utilising their sites to better advantage.

The last paragraph of Mr. Strachan Gardiner's paper will appeal to every reader interested. It is indeed time the 28 Acts of Parliament passed during the last fifty years dealing with housing were consolidated. As things are, the difficulties of action are immensely increased by the uncertainties of the legal position. Times over and again obstructionists on local bodies have simply bounced willing majorities into the abandonment of schemes by misrepresentation of the meaning of vaguely-drawn clauses in the face of which possible costly litigation has been feared. It is hopeless to expect this from the present Parliament; but we trust, when peace returns, and another Parliament is more amenable to the dictates of common sense than this has proved itself, a united attempt will be made to bring this about.

We believe Mr. Gardiner is quite right when he says that, but for the Finance Act of 1910, the more thrifty workmen would have increased the number of those who build their own houses. A wise legislator would assuredly set himself to encourage the popularity of bricks and mortar as the best investment for small savings. The rural worker who earns less than a pound a week may find this impossible. And the artificial forcing up of wages which some favour will defeat its own object by compelling the former to limit his labour bill. Whatever is done, the "cheap cottage" at first cost, which is so much advertised by some, is only obtained by sacrificing accom-

modation to an impossible minimum, and, in some cases, by the omission of quite essential needs. The requirements of a rural labourer differ materially from those of the town worker. The latter needs comparatively little storage room, because he can, and mostly does, buy all his food, fuel, etc., in small quantities. The peasant, on the other hand, living far from shops, has to store much in large quantities, and to provide shelter for his pig, his tools, etc. He is, moreover, often so isolated, and his family are so much more with him, that he requires more space indoors if he is to spend comfortable evenings after toil free from the attractions of his only source of recreation, the village inn.

On the other hand, the peasant has no use for some of the refinements well-meaning people thrust upon him, which are unappreciated, and simply increase cost. Mr. Gardiner instances the 50,000 cottages for the rural labourers which have been built in Ireland with State aid, mostly one-storey buildings, with a living-room and two bedrooms, and costing from £128 to £211, at rents varying from fourpence to 2s. 9d. per week. We illustrated some of these in our issues of June 27, 1913, and took occasion to point out many of their defects, due principally to the want of care in giving out the contracts by the Irish District Councils. We also ventured in our issue of Jan. 16, 1914, in an article on "The Genesis of a Labourer's Cottage," to point out how and why the requirements of the Irish labourer differed from those of the English peasant. We pointed out some of the many things which even architects forget, and which benevolent faddists ignore, but which simply worry the labourer to no good purpose, and we indicated on Jan. 30, 1914, how these mistakes might be avoided; and economy and fitness really secured. We mention this because Mr. Gardiner says most truly that "Village planning should be on a scientific basis, just as much as town-planning," and because we regret to say with regard to both there is a good deal too much of the "science falsely so-called," so dear to the enthusiast who means well, but whose efforts too often hinder rather than help.

THE ARTS IN WAR TIME EXHIBITION.

The really excellent exhibition of paintings and sculpture opened in the Guildhall Art Gallery last Tuesday by the Lord Mayor, and arranged for the benefit of artists adversely affected by the war, is a striking proof of the brotherly kindness of the more fortunate members of the fraternity of the brush and chisel who, less hardly hit than their more needy

fellows, have rallied nobly to the call of the committee and contributed a number of the best things on view. It is also a gratifying instance of the prompt and judicious organisation of the committee itself, among whose members figure prominently Sir Aston Webb, K.C.V.O., C.B., R.A., Mr. Paul Waterhouse, F.R.I.B.A., Mr. Ernest Newton, P.R.I.B.A., Mr. H. Chatfield Clarke, Mr. David Murray, R.A., and others.

In normal times Art is rightly regarded as an important national asset. In the hope that after the war Art will re-assert its rightful position, it is surely desirable, and necessary, to assist artists at the present time. The pictures exhibited come under two categories—gifts from generous artists for the benefit of the Fund, and exhibits contributed directly by artists in need of assistance. The whole proceeds of the exhibition will be devoted to the relief of distress among professional artists due to failure of income in consequence of the war. So during this period of depression works of art can be acquired on terms which make their purchase unusually attractive, whilst in this case purchasers will have the additional satisfaction of knowing that they are contributing to a useful and necessary work.

Among the most noticeable of the exhibits are "The Home-coming of the Herring Fleet" (1), by Mr. A. Sanderson Edward; "Sweet September" (6), by Miss Miriam J. Davis; "The Mill" (9), by Mr. A. K. Brown; "Reflections" (10), by Mr. H. A. Olivier; "Moonrise" (12), by Mr. H. Hughes Stanton; "The Grey North Sea" (14), by Mr. Robert W. Allan, a fine rendering, and a precious memento hereafter, to the purchaser, of the storm-swept waters where the Grand Fleet is keeping such rigorous watch and ward. Mr. David Murray, R.A., sends "In the Heart of the Highlands" (17), a characteristic reminiscence of the sternly picturesque which few but himself can attempt with like success. Of beauty of another order, but as effectively reproduced, is Mr. David Calderon's "A Summer Night" (20). Mr. Edward King has five exhibits, of which we like best his "Springwell Lock, Rickmansworth" (27). "Gone" (29), Mr. A. Chevalier Taylor, will touch the hearts of all beholders. "Toilers of the Sea" (33), by Mr. John Charlton, is good, and so are Mr. Tom Mostyn's "The Eye of the Storm" (36), and "The Gate" (89). Mr. Hain Fuswell's "The Gleaner" (34) is the best of his three sent to our thinking, but his "Flatford Lock" (71) will please many. Mr. John S. Sargent sends an "Alpine Valley" (87), which will not disappoint his admirers. "Corfe Castle" (92), by Mr. B. Priestman, is a welcome presentment of the well-known old stronghold. "Midsummer Night" (93), by Mr. Herbert Draper, and "Zephyr and Aurora," by Mr. G. E. Moira, will merit the attention they will secure, and among the subjects none will willingly miss are "The North-West Passage" (99), by Mr. Wm. Thos. Smith, and "For Those at Sea" (103), by Mr. Fred Roe.

Among the rest of the 198 works sent we may mention "The Road Over the Downs" (31), by Mr. W. Dacres Adams; "Lovers" (47), by Miss E. F. Brickdale; "The Canal, Evening" (54), by Mr. Newbury A. Trent; "Alms-houses, Selworthy, Somerset" (107), by Mr. A. Carruthers Gould; "Falmouth Harbour" (116), by Mr. A. Henry Fullwood; and "The Storm Cloud" (146), by Mr. Mease Thomas.

The urban district council of Epsley have instructed their surveyor, Mr. C. J. Jenkin, to prepare estimates of the cost of widening Henden Lane near the church gates, and also for widening the Great North Road, from Wallfield Bank to the county boundary, from 50 ft. to 60 ft.

URBAN AND RURAL HOUSING.

The following two papers were read at the meeting of the Surveyors' Institution on Monday night. Each deals with the report of the Land Enquiry Committee:—

URBAN HOUSING.

By C. S. Joseph (Visitor).

The conclusions of the Enquiry Committee may be stated as embodying the following main principles:—

1. That a large proportion of the population, to the detriment of the State, occupy overcrowded and insanitary dwellings, due to the scarcity of suitable accommodation at a reasonable rent.
2. That the supply, whether by public authorities, public utility societies, or private enterprise, is very much less than the demand.
3. That the high cost of land, the incidence of rates, and local by-laws, militate against the supply being maintained.

To remedy the evils indicated in their conclusions, the Committee make 15 recommendations. It is impossible to deal with them all, but, again seeking to ascertain the principles underlying the conclusions, I think they may be stated as follows:—

1. That as a result of a complete survey of their district, a local authority shall prepare a scheme for the provision of the necessary housing accommodation, particularly for the population likely to be permanently resident within their area.
2. That where sites are not readily available, transit schemes should be promoted, and undeveloped areas town-planned, and congested areas replanned.
3. That public utility societies should be assisted financially, to enable them to provide such accommodation.
4. That insanitary property should be improved and adapted to modern conditions in order to mitigate the hardships of the present closing order procedure.

1. There is probably nobody in this room who will disagree with the principle of that summarised by me as No. 1. Unfortunately, too many of the population of our towns are living under conditions which militate against the physical and moral well-being of the inhabitants, and which are inimical to the much wider and important interests of the State, and any schemes that would lead to a marked improvement would not only receive the support, but the hearty co-operation and goodwill, of every member of the Surveyors' Institution. In the administrative county of London, excluding the extra London urban districts, there were, according to the census of 1911, a population of 265,553 persons living in one-room tenements. The census returns for the same year also show that there were 32,351 tenements, each of one room, which were occupied by more than two persons. The returns also show overcrowding to an equal extent in tenements of two and three rooms. Notwithstanding the overcrowding shown by these statistics, there has, however, been a great improvement in recent years. Large slum areas have been cleared, and large blocks of worn-out property have been pulled down and replaced by dwellings for the working classes. Those who have had experience spread over a period of years know how the best of the slum property 25 years ago was worse than some of the worst of to day. Apart from this, however, the effect of these clearances is much greater than appears at first sight. It is not extended to the persons displaced only, as they never, or very rarely, occupy the new buildings when erected. The new occupants vacate their dwellings and make room for the occupants of the grade immediately below them, thus relieving a pressure further down, and there is, therefore, a general levelling up. This, though slow at first, is cumulative in effect. The provision of cheap means of locomotion has been the means of dispersing the population, and there is evidence of this in the East End, where overcrowding is not nearly so great as it used to be within quite recent years, so that the practice of paying key money for an empty tenement has now become extinct. This has had an effect upon site values to a most marked extent, and prices for land that could easily have been realised some ten years ago must now be discounted to the extent of 30 or 40 per cent.

2. In dealing with the question of supply it must be borne in mind that a large number of people must live near to their work, and this has become increasingly diffi-

cult owing to the commercialisation of the central areas and the diminution of the area available for residential purposes. The result of this is, necessarily, the overcrowding of the area that remains. For those persons who need not, or do not desire to, live in the central districts, housing accommodation can be provided in the suburbs where land is cheap, and the areas so built upon could, with advantage, be town-planned to prevent monotony and overcrowding on the site. My experience, however, has been obtained in the far more difficult problem of providing the necessary amount of accommodation with a constantly diminishing area available, and I propose particularly to deal with this more difficult aspect this evening. Concurrently with a great rise in the standard of the requirements demanded by the working classes, there has been a marked increase in the cost of labour and materials used in building during the last twenty years, with the result that, with perhaps one or two exceptions, private enterprise has abandoned the attempt to provide housing accommodation in the central districts, as the possible return on capital could not exceed 6 per cent., and for some years past only public authorities, public companies, and public utility societies have made such provision. It was my good fortune to succeed my father, who devoted many years of effort in helping to solve this difficult question, and I have personally been privileged to design and supervise the provision of accommodation for over 30,000 persons of the working classes in buildings erected in central districts where the problem is to provide the maximum amount of satisfactorily healthy dwellings on the sites available, having due regard to ample open spaces between the buildings. The supply, however, still falls short of the demand, and in every instance that has come under my notice it is quite the usual experience to find all the tenements are let before the buildings are completed. At the present time there is a long waiting list of suitable tenants who desire to occupy tenements in blocks of buildings, of which I have intimate knowledge, as soon as any are empty. The same aspect of the problem is emphasised by the fact that in the whole of the buildings erected under my supervision the average loss from empty tenements, including loss of rent by reason of removals, does not exceed $\frac{1}{2}$ per cent. on the gross annual rentals.

3. In my opinion it is not the case that the cost of land has so important a bearing on the problem as is indicated in the Report. I am aware that a great public authority, which has done much to stimulate the provision of good dwellings for the poor, has at times experienced a difficulty to pay anything for the site in designing dwellings upon the land available; and in some cases it would even appear from their published reports that they require the site for nothing and a subsidy towards an estimated deficiency. Now, this is the more remarkable in view of the fact that they are specially placed, so far as financial arrangements are concerned, many of their calculations that I have noticed carrying interest on capital at only 3 or $3\frac{1}{2}$ per cent. Notwithstanding this, it is quite feasible to pay 7s. 6d. per foot for a site upon which dwellings may be erected and yet obtain a fair return on the capital outlay, and I have known instances where a public utility society has paid as much as 17s. 6d. per foot for land. Although the cost of land naturally has a bearing upon the rent that has to be paid by the tenant in order to obtain the necessary return on the capital outlay, experience shows that in normal cases where land does not exceed 5s. per foot, the charge per tenement attributable to the site does not exceed 9d. per week of the rent, and that even if the cost of the land were increased to 7s. 6d. per foot, the rent per tenement payable in respect of the land would only amount to 1s. 4d. per week. There is some considerable difficulty in obtaining cleared sites in central districts, as it very rarely happens that a large area comes into market as vacant land. There are, however, large areas, properly developed nearly a century ago, covered by worn-out and un-

satisfactory buildings with large gardens, standing therefore on extensive plots of land, which now only afford accommodation for a relatively small number of persons, and which cause much anxiety to local authorities and to the owners. My experience has been that in many districts this class of property can be purchased if the matter is properly approached at a price which would represent but little, if any, more than the present-day value of cleared land, and at a figure which would enable properly designed blocks to be erected, housing many more persons than are displaced by the demolition, lettable at rents within the means of the poorest, and returning a reasonable amount upon the capital involved. As an example of this I may refer to the experience of the Guinness Trust. This Trust only lets to persons with a strictly limited income, who would probably not be taken as tenants by private owners or public companies. The average earnings of the head of each family is only 19s. 1½d. per week, and the total average income of each family does not exceed 28s. per week. Public authorities cannot apparently cope so successfully with the problem, as an interesting announcement which appeared in the public press would seem to indicate. The chairman of the housing committee of the authority concerned stated that it had been decided to abandon the idea of installing baths, as their provision would have entailed an additional 1s. per week to the rents. My experience has shown that the extra rent required where baths are provided is only 2d. per week. A far more serious problem than the cost of the land is that of the rates. These, like the poor, we have always with us, and there has been a constant tendency to increase. We have only to look back, say, ten years, and observe what the increase has been, to see how serious is the position. The amount of the rates may mean the difference between success and failure of a scheme, an experience which has caused schemes propounded by public authorities and private persons alike to be abandoned. This is the more serious because the need for a large provision of good accommodation, letting at a low rent, is greatest in the poorer and overcrowded districts, which are, without exception, those which are burdened with the greatest need for public expenditure, resulting in the highest rate in the pound. Even after a scheme has been carried out, the progressive tendency of the rates renders necessary some adjustment of the financial arrangements in order to preserve equilibrium. It is not possible to modify the capital arrangements, and if the fixed charges are to be met, the only alternative is to raise rents, irrespective of whether the tenants can properly afford to devote any larger proportion of their low earnings to rent. But this difficulty as to rent is further aggravated by the action which seems to be growing among London borough councils of reducing or refusing the compounding allowance. Surveyors know that this is an allowance that a borough council can make if they so agree with an owner of working-class dwellings in return for his paying rates whether the premises are occupied or not, and also for agreeing to be rated in lieu of the occupier and so simplifying collection. Some borough councils, notably Islington and Camberwell, decline to make any allowance, and are collecting the rates direct from the tenants. Although this increases the cost of collection to them, it is also to the disadvantage of the owner, so that the necessity arises for increasing the rents payable by the tenants where the owner continues to collect an inclusive rent. The result has further been that the erection of dwellings is restricted in those boroughs, as no one will risk the erection where the allowance has been refused. I have personally advised against the purchase of sites in Islington, and lately also in Camberwell, and I have no doubt that in other cases agencies for the provision of dwellings have been similarly advised in similar circumstances. I find that the actual increase in the rents that would have to be charged in consequence of the compounding allowance not being allowed amounts to as much as 3d. per

tenement per week, or about one-third of the rent attributable to the land. The cost of building generally, as compared with twenty years ago, or even ten years, has considerably increased, but the cost of dwellings has not increased at all. It is good practice that fresh and improved methods are designed to meet exceptional difficulties whether they be of greater requirement, a higher standard, or increased cost of production. This fundamental economic law has not been abrogated in the design and erection of artisans' dwellings. As the cost of certain methods increased, it has been necessary to devote special attention to devising other means which would involve less expenditure, whilst not militating against sound work and a reasonable maintenance. That efforts in this direction have not been without success is shown by the fact that good block dwellings can be erected at a cost very little in excess of that of fifteen years ago, while the standard of the accommodation provided is far superior. It is to a considerable extent a question of construction and a readiness to spare no effort to economise in the right direction. According to the latest tenders received, the very best class of block dwellings can be erected at a cost of 8.95d. per foot cube, and this figure includes the provision of a bath in each tenement, hot and cold water supply, the use of drying-rooms, perambulator sheds, and covered playgrounds, and the fitting of Venetian blinds to every window. I should also add that in this particular scheme the foundations were costly, so that I think my contention that the cost of building this class of property has not increased is justified, as, fifteen years ago, the cost was 8½d. per foot cube, and did not include the modern conveniences mentioned above. This success in first cost has not been at the expense of maintenance, as I find that the percentage of gross rents required for repairs even after ten years does not exceed 6 per cent.

I would now turn for a short time to a consideration of the remedies suggested by the Land Enquiry Committee. I propose considering these as summarised by me, and the first is—

1. That as a result of a complete survey of their district a local authority shall prepare a scheme for the provision of the necessary housing accommodation, particularly for the population likely to be permanently resident within their area.

A complete survey of the whole housing conditions and requirements for each district can only be accompanied by good results, but in order to secure this it is not really necessary to await further statutory authority. In London, at any rate, the local authorities are empowered to make inspections in their districts with a view to ascertaining what nuisances, including overcrowding, exist, and have power to abate such nuisances and to secure the proper sanitary condition of all premises in their district. Notwithstanding this, when Lord Islington (then Sir John Dickson-Poynder) endeavoured to introduce into the Housing, etc., Bill, 1909, a clause making it obligatory to have a complete survey of a district every five years, so great an objection was taken to it that it did not obtain Parliamentary sanction. The Act did, however, contain a provision for a systematic inspection from time to time with a view to ascertaining whether any dwelling-house was in a state so dangerous or injurious to health as to be unfit for habitation. There is no time limit, although the Local Government Board may make regulations with regard to the performance of this duty. The authorities having ascertained the facts and framed an estimate of the needs of their districts, are to take steps for the preparation of a scheme for the provision of the necessary housing accommodation for those likely to be permanently resident within their area. From a return recently issued, the magnitude of such a task for London is apparent; and if the local authorities were charged by Parliament with the duty of providing this accommodation, the task would be herculean. The bulk of the accommodation provided is in small houses in the suburbs, but there always remains a certain proportion that is necessary

in the central district where the areas available are always becoming smaller. According to the latest return available (1913) in the central districts of London there were only seven additional rooms provided for the working classes, the whole of the remainder being outside the central districts. To avoid any misunderstanding, I think I should make it clear that the reason why only seven additional rooms were provided in the central districts is that the number of new rooms constructed—namely, 6,181, were practically entirely counterbalanced by the demolition of 6,174 rooms. There are no data to enable one to state with any accuracy the increase in the population of this central area, but it is interesting to note that the population of Greater London increased by 72,178 in that year alone. Even in the total number of rooms provided in the outside districts of London in the same year, only about 19 per cent. of the estimated increase would have been housed. It must be borne in mind, however, that the foregoing figures do not take into account the conversion of better-class houses for the occupation of persons of the working classes, of which no statistics are available. Beyond their powers of inspection, local authorities may acquire and demolish obstructive buildings and recoup themselves by levying a betterment charge on adjoining owners, or they may deal with a large or small area by purchase at market value, and rearrange and plan. This method of purchase under statute, although at market value, appears to me to cost more than in my experience property of this kind can be purchased for by private negotiations. The local authorities also have the power to make by-laws fixing the number of persons who may occupy a house let in lodgings, and for the registration, inspection, draining, cleaning, and ventilation of such a house. There had long been a statutory provision as to an implied covenant that a house letting within certain limits of rent was reasonably fit for habitation, but, as values grew, this condition applied to but relatively few properties. In order to enlarge its scope, so as to cover the class originally intended, the Housing, etc., Act, 1909, raised the rent levels of the houses included, so that in London houses of £40 and less are subject to this covenant. Not only are the houses to be fit for human habitation at the commencement of the term, but the owners are to keep them in such a condition during the tenancy. If, in the opinion of the local authority, this condition is not complied with, they may require the landlords to execute such works as they may specify in order to make the premises in all respects reasonably fit for habitation. If their requirements are not complied with, they have drastic powers as to closing and demolition without compensation, and there have been some interesting appeals to the Local Government Board on cases so dealt with by the local authority. The effect of the implied covenant is to give the tenant a right to recover against his landlord for injury due to the defective condition of the tenement, but decisions have limited this right to the person of the tenant, and not to members of his family residing with him on the premises. Local authorities may be kept up to the mark by Section 63 in the National Insurance Act, 1911, wherein it is provided that the Insurance Commissioners may recover from a local authority any increased payments due to bad housing conditions, if it can be proved that in the locality there is at least 10 per cent. more sickness than is normally the case. Notwithstanding all these powers and the stimulus to activity existing in one form or another, there is still often heard the cry that further statutory powers are necessary. I do not share the view that Parliament need again interfere, but local authorities should exercise their existing powers. It is not in the lack of powers, but in the neglect to exercise them that the chief difficulty lies.

The return already referred to shows that in the central districts of London no new tenements were provided by any of the local authorities, and that in fact those bodies only provided 1,688 rooms out of a total of

18,114 provided in the whole of the extra-London districts. I think this proves my contention that the local authorities have not used the powers they already possess. I believe a good deal of the hesitation on their part to embark upon housing schemes is due to the fear that there may be a charge upon the rates. This fear is groundless, as I have completed six schemes for three local authorities in London, all of which show a profit on the working, and this profit could now be increased if advantage were taken of the borrowing powers under the Housing of the Working Classes Act, 1914. Hardship upon owners and tenants, and the political effect of losing such tenants as voters, where a clearance is on a large scale, no doubt has a retarding influence. The hardship upon owners has undoubtedly prevented many cases of action that ought to have been taken in the interest of the district and tenants, and the purchase of an area under the Housing Acts has been avoided if possible on the score of cost. One must realise that the clearing of such areas in London has already entailed an expenditure of more than four millions sterling, and it cannot be said that the problem has been more than partially solved. In my opinion, however, no consideration of cost should hinder the proper discharge of present powers and duties of the local authorities, and insanitary property should be dealt with in the same manner as would food unfit for human consumption, or a person suffering from a contagious or infectious disease. There seems no reason why an annual license should not be required for all houses let out in tenements, and this license could be withheld at any time if the premises were considered to be unfit for human habitation. All owners of working-class property where the annual value of the tenement does not exceed £20, and in respect of which the medical officer of health issues a certificate that the premises are provided with a proper water supply, are granted a valuable concession in the exemption of their property from inhabited house duty. I suggest that this license should be an annual one, and that the medical officer of health should have power to withhold his certificate if the premises are insanitary.

2. That where sites are not readily available, transit schemes should be promoted, and undeveloped areas town-planned, and congested areas replanned.

Transit schemes of various kinds for rendering land in the suburbs available for building are obviously desirable, and a great deal has been done during the past few years in this direction. Where land has thus been rendered available, town planning of undeveloped land might be adopted with advantage; but, in my opinion, too much has been made in the Report of the question of the number of houses to the acre. Space in the rooms provided, and more rooms in each house, so as to be able to separate the sexes, is of far more importance than the amount of garden which in most instances is not properly cultivated by the tenants. Large central gardens, and open spaces and playgrounds, properly maintained by the owners, seem to me to be far more desirable.

There is an underlying fallacy in the suggestion that the number of persons or houses per acre necessarily means a high death rate and insanitary surroundings, for in nearly all block dwellings there are at least 600 persons to the acre, and the death rate is considerably under 12 per 1,000.

The committee suggest the fixing of a maximum number of dwelling-houses to the acre, and consider 24 too many, so that, in their opinion, apparently, there should be fewer than 200 persons to the acre. The replanning of congested areas is a far more difficult problem. It would be costly to carry out, and it would cause difficulties owing to the displacement of the working-class population, but if the suggestions previously made were carried out, large sites would readily become available. The London Building Act is sufficiently stringent to prevent overcrowding upon these sites. I think I should again reiterate the fact that, notwithstanding there may be over-

crowding on any particular area, when the houses are demolished and blocks of dwellings erected in their stead, the number of persons housed is far greater, in practically every instance, than in the insanitary area demolished, as the new buildings are erected to a far greater height than the old ones which stood upon the site.

3. That public utility societies should be assisted financially to enable them to provide such accommodation.

I think the suggestion that public societies should be allowed to borrow a larger proportion than now of the capital required for the erection of working-class dwellings is a useful one, but the rate of interest would have to be kept very low if the schemes are to be self-supporting, more especially if it is desired to house the poorest wage-earners. This recommendation has already been carried into effect by the Housing Acts of 1914, which give powers to the Treasury to issue loans to any authorised society, company, body, or persons whose objects include the erection and improvement of dwellings for the working classes, and whose constitution forbids the payment of interest or dividends at a rate exceeding 5 per cent. per annum.

4. That insanitary property should be improved and adapted to modern conditions in order to mitigate the hardships of the present closing order procedure.

The Committee's recommendation that insanitary property should be improved and adapted to modern conditions has been adopted in Birmingham and in some districts of London; but I am not at all in favour of this movement, as large sums of money are expended on these so-called improvements, which, however, never bring the buildings up to the proper standard, but increase the life of the houses instead of utilising the land on which they stand to the best advantage, and providing buildings which would comply in every respect with modern requirements. The ostensible object of this method of dealing with such property is the lessening of expense, and to this extent the method may be said to be a success. It remedies the immediate defects, but, as so many inexpensive expedients prove ultimately, they are cheap and nasty. The Committee's Enquiry in regard to housing devotes several chapters to the effect of the leasehold system, and the rating of land values upon working-class dwellings. I have not dealt with these, as they will doubtless be fully considered under the headings of "Tenure" and "Rating," especially as they do not, in my opinion, affect the question of housing to any marked degree. The conclusion of my consideration of the matter is that much may still be done by the various authorities if they exercise to the full their existing powers. I would reiterate that what is wanted is not so much further legislative activities, but a wider use of those powers which already exist.

RURAL HOUSING.

By R. Strachan Gardiner (Fellow).

Remedies for existing evils have from time to time been suggested which are only adapted to quite ideal conditions, and I do not think it is always sufficiently remembered that we have ordinary human nature to provide for, with its inevitable shortcomings. Some of our most sincere social reformers, too, are apparently more conversant with urban conditions, and, consequently, their proposals from a rural standpoint are, in many respects, impracticable. At the same time, we are reminded that the question of rural housing has a direct bearing upon urban matters. Cases are quoted where, owing to the scarcity of rural cottages, men employed in the country are obliged to find accommodation in the neighbouring towns. It is frequently the low-paid rural labourer who migrates to the town in search of higher wages and a better home, and any means of keeping him in the country would tend to lessen the competition among unskilled labour in the towns. Many of our existing cottages are undoubtedly inadequate, and in an unsatisfactory condition, more particularly

those belonging to small owners—sometimes working men—who are not in a position to afford the expense of repair or reinstatement. In a number of cases such cottages are only allowed by the local authority to be occupied, owing to the lack of alternative accommodation. These small owners might, in many cases, be considerably helped by an extension of the Manchester Corporation practice, under which the local authority carries out the work, and accepts payment by instalments. Interest at 4½ per cent. is charged on the outstanding amounts, and, on failure to pay, the corporation collects the rents. The shortage of houses has, however, first to be made good before such other evils as overcrowding and insanitary conditions can be abated. In the past the large landowners have provided cottages on their estates at uneconomical rents, not only for their own dependants, but for employees of the State, local authorities, railway companies, etc.; but bearing in mind the tendency to break up the larger estates, and the trend of agrarian legislation, this source can hardly be depended on in the future. If all employers undertook the responsibility of housing their own men, the position would be greatly simplified; but it is difficult to see how this could be enforced, and the policy is condemned by the Committee as being open to their objections to the "tied-house" system. In some rural districts within easy reach of large towns, particularly near the sea, and amid picturesque mountain scenery, cases occur where owners are tempted by offers of high rents to let cottages to people who use them for week-ends and summer holidays, increasing the scarcity, as far as workmen are concerned. The decreasing popularity of the "living-in" system for farm labourers has also affected the demand for cottages. The effect on personal character of moving a family into a better cottage is very noticeable. Give the workman a good house and garden that he will take a pride in, and he becomes a more efficient worker and a better citizen. In rural districts there is a great difference between what may be called the comparatively fixed population and a movable population employed in a terminable industry, such as coal mining. The latter do not take root in the same way, and, naturally, less interest is shown in their homes. To facilitate the housing of a mining population, local by-laws might well be modified, as far as possible, to allow of a more temporary class of building being erected.

The problem of the countryside, as in the towns, is the housing of the poorest, and the main difficulty one of cost. The Committee state that the reason which outweighs all others in preventing private individuals from building more cottages is that the wages paid do not allow an agricultural labourer to pay an economic rent. The housing of those who can afford to pay such a rent may be left to the private enterprise which has hitherto provided 99 per cent. of the working-class houses in this country, although the bulk of them have been built in urban areas in response to the better prospects they afford there as an investment. Building houses is a popular form of investment among the more thrifty workmen; they like to see something tangible for their money, but the feeling of insecurity caused by the Finance Act, 1910, dearer money, attraction of other investments, increased cost of building, and the responsibilities thrown upon house-owners by the Housing Acts, among other reasons, have tended to lessen the popularity of bricks and mortar as an investment for the time being. But how is the man who earns £1 a week, or less, to be provided for? It cannot be done by cutting down accommodation and area of site; a workman is entitled to an adequate home, and the best allotment is an ample garden attached to the cottage, which is a means of adding substantially to his income. The health of the labourer is his stock-in-trade, and improved general health being one of the objects of reform, this should never be lost sight of in the search for cheap construction. What is an economic rent in such cases? Are we to assume that the results of better housing benefits the individual occupier only, or should the indirect gain to

the nation following an improvement in the general health of the community be taken into account? One can hardly expect that a man earning 20s. a week can afford more than 2s. 6d. a week for rent, and it is equally difficult to see how an adequate cottage can be provided for him at less than 4s. a week if a commercial rent has to be obtained. It is also most desirable that cottage occupiers should pay their own rates and take an intelligent interest in local government. Unless the problem of housing our poorest workers in sanitary dwellings is to be abandoned, one of two methods must be adopted. Annual grants will have to be made to local authorities, to enable them to let to these people at rents based on their ability to pay, or wages will have to be raised sufficiently to allow them to meet an economic rent. The Inquiry Committee advocate a rise in wages, to enable a labourer (a) to live in a state of physical efficiency, and (b) to pay an economic rent for his cottage. The Government have decided to deal with the rural housing problem by the establishment of a minimum wage based on this recommendation, and if the conclusion has been come to that it is the solution in the case of agriculture, it seems inevitable that the same method will be adopted with other industries. We should therefore satisfy ourselves whether the agricultural labourer now receives an adequate return for his work, and as much as the farming industry can afford to pay. If the reply is in the negative, everything possible in the way of increasing production, revision of land taxation, co-operation, and adequate equipment of farms will be necessary to put the farmer in a position to meet a rise in wages, and the proper proportion between cost of labour and rent becomes a question of considerable importance. An appreciable difference would be made if the payment of wages in kind, now a prevalent custom, were commuted to weekly cash payments. It appears to me that any artificial forcing up of wages would defeat its own end, as a farmer would be compelled to reduce his labour bill to the amount he could meet. An economic wage is quite as vital a matter as a commercial rent if the industry concerned is not to suffer. It would, however, be manifestly unfair to consider the case for un-economic rents unless wages paid are the maximum, as such a method would amount to subsidising one class of employer at the expense of the community. Agricultural wages have risen in many districts during the last few years; while, on the other hand, so have the wages of those who labour in the building trade, and any further natural rise would probably be a gradual one. The increasing price of commodities has also to be taken into account as a balancing factor. A further recommendation is that it shall be made a definite statutory duty of local authorities to provide adequate and sanitary housing accommodation for the working classes where permanently required in their area. Theoretically, it is already their duty to provide a sufficient supply of houses and to close insanitary dwellings; but in existing circumstances the task imposed upon them by the Legislature is too heavy for them to undertake, and the work must, in some way, be made more attractive. Block grants from the Exchequer appear to be the only effective means, with wages and economic rents in their present relative proportion; and even in the event of a rise in wages, as advocated, there will always be a residuum of the poorest unable to pay an economic rent. Local statistics generally reveal a greater amount of disease, intemperance, and crime in districts where housing conditions are worst, and reforms with the object of lessening these evils are surely worth considering from a national point of view. The Committee also advocate better facilities for the erection of cottages being given to public utility societies; and while it is hoped they will always be encouraged, by loans for long terms, at low rates of interest, it is difficult to see how such bodies can effectively deal with the purely agricultural problem of building scattered cottages on many detached plots of land throughout a country district, and, as far as I can see, we shall have to

depend chiefly on the local authority where cottages are not provided by private individuals. Cheap money being so important, local authorities have the great advantage of being able to offer the rates as security, and building would, in most cases, be done by contract with local builders, so that they would not suffer by loss of trade.

The report emphasises the necessity of stimulating local authorities to make more extended use of their powers under the Housing Acts; but I am convinced that the hesitation and delay is due to the difficulty of carrying out what is admittedly the ideal system—a self-supporting scheme, particularly having regard to the advancing cost of building. Estimates of the increase very from 20 to 30 per cent. during the last ten years or so, and it is probable that it may rise still more. There is usually considerable local opposition to any part of the expense of a housing scheme being charged to the rates, which are already a rapidly-growing burden, and in themselves a check to building. To bring pressure to bear on local authorities may tempt them to curtail necessary accommodation as a means of reducing cost, or to cross the line between economical construction and jerry-building, which would be a disastrous result, subsequent repairs being quite as important a consideration as capital outlay. The numerous competitions for designs of cheap cottages during the last few years have generally failed to solve the difficulty, from the rural point of view, low first cost being usually obtained by reducing accommodation to an impossible minimum, and, in some cases, the omission of quite essential items of expenditure. The cost of schemes may in some measure be reduced by modifying by-laws with respect to width of roads, and limiting the number of houses per acre, which would entail less road-making. It is to be hoped that landowners generally will follow the example set by some, and offer land where required at low prices: possibly '999-years' leases, at moderate ground-rents, may be a means of facilitating matters. Any unnecessary cost in the development of a building estate eventually becomes a general burden in the form of higher rents. It hardly seems fair that all the expense of streets in a housing scheme, which become thoroughfares, and of sewers which are part of the main system, should be charged to the scheme. A proportion might reasonably fall on the rates. The Committee advocate a central housing authority; but while it may be admitted that the rural district council, the existing authority in rural districts, is not the most suitable, there is a general opinion that the work might well be undertaken by the county council, a knowledge of local requirements being very necessary. Members of rural district councils are often owners of house property in the district themselves, and they are so subject to local influence that the work may be very difficult for them. Such councils also are not in a position to offer their surveyors the salary that would attract the competent men required for the responsible duty of launching and working a housing scheme. A county council employs a qualified architect, and, with the help of local advisory committees, would be able to deal with schemes on a more extensive scale, and effect economies by standardising parts and purchasing in larger quantities. The use of local materials, with a local type of plan, to which workmen in the district are familiar, means a reduction in cost, and a county conference of local architects, surveyors, and builders—who would, I feel sure, readily give their experienced advice—might be of great assistance.

In dealing with rural areas, their possible gradual transition to an urban character should not be lost sight of, and the Committee emphasise the value of cheap transit for moving the town labourer on to cheaper land and to more healthy, cheerful surroundings. It is worthy of note at the moment, when the courage and endurance of the Belgian soldier are fresh in our minds, that Belgium provided such cheap and rapid transport facilities for her workers. While only 23 per cent. of occupied persons were

employed in agriculture, no less than 56½ per cent. of the total population lived in country districts, which meant that about one-third of the urban workers were rural dwellers. In this country (1911) 78 per cent. of our population lived in urban areas. One does not build a cottage without first preparing a plan, and it is just as necessary to plan the situation and arrangement of cottages. "Village planning" should be on a scientific basis, just as much as "town planning," and the rural housing authority might with advantage be armed with powers over building-lines, area of site, improvement of roads, and reservation of open spaces. Cottages for ploughmen and stockmen would need to be built within easy reach of the farm-steadings; but for ordinary labourers it is better to concentrate them near villages, to allow of social intercourse, and to lessen the distance children have to walk to school. The cottage required by a country labourer is in many ways different to that which meets the necessities of an urban worker. The latter does not need so much accommodation; he can purchase commodities at a convenient distance in small quantities, and places of amusement and recreation are within easy reach. The farm hand in his frequently isolated cottage requires more room, so that he can spend a winter evening in some comfort at home; he has to purchase food in greater bulk from some distance, coal and firewood by the load, and provision has to be made for a pig, garden tools, etc. If a man returns from his daily toil to a cramped living-room, used by all in common, where housework is done, wet clothing hung to dry, and so on, can one be surprised if he seeks the more congenial surroundings of the village inn, and so wastes money that might be better spent in rent for a more comfortable home? Housing the agricultural labourer is comparatively expensive, as cottages can rarely be built in large blocks; larger groups than four are seldom advisable, and pairs are generally most suitable, as it is convenient to have a neighbour at hand in case of need. But a detached cottage is frequently very popular. I have found an intense objection among the better-class country workmen to living in one of a row of cottages. The double-story cottage is, I believe, much more appreciated than the bungalow type.

It is evident that the necessity of reducing cost to a minimum does not allow of any expenditure on ornament, and a plain, substantially built cottage that looks well adapted to its purpose is in the long run much more satisfactory. Most of the old picturesque cottages, which are a pleasing feature of our countryside, owe their beauty not so much to architectural effect as to the mellowing effects of time, to their appearance of being thoroughly at home in their surroundings, and to an attractive wall-covering of creepers. At the same time, I am no advocate for one standardised plan, or absolute uniformity of design, and much can be done in the way of variation without materially adding to cost. Careful planning should be mainly directed to the provision of the maximum amount of convenient house-room with the minimum quantity of material. In the majority of cases three-bedroomed cottages are required for the proper separation of the sexes and the prevention of overcrowding. Sufficient accommodation to enable a family to live together as long as possible may help the difficulty of meeting an economic rent from the combined income of the working members, where the earnings of the principal bread-winner are inadequate. A certain number of single men have also to be provided for, and in the case of a small family, where the third bedroom can be spared without causing overcrowding, a lodger represents an addition to the income of the household. About £200 appears to be the average cost of a suitable five-roomed labourer's cottage, and it is incumbent upon local authorities to use substantial materials that will, at all events, last for the period of the loan, with the lowest possible outlay in repairs. This is one of their difficulties, having to build better houses, being in the position of

trustees, whereas the demand is for lower rents. The most satisfactory walling materials are brick and stone, according to locality, and in my own district, where bricks are obtainable at 24s. per thousand, a 9in. wall roughcast in cement is found to be dry and economical. Eleven-inch cavity walls, where men are accustomed to building them, can be recommended; but if mortar is carelessly used, and allowed to drop on to the damp-course and wall-ties, a number of conductors for damp are easily formed. Concrete does not appear to represent much saving, unless a large number of cottages can be built at a time, and a local supply of suitable material is available; there is also an unsatisfactory risk of dampness, which can be eliminated in dealing with brick and stone walls. It is, however, an advantage to use concrete fittings, such as doorsteps, window-heads and sills, lintels, etc. Wood or galvanised iron, requiring double walls, cost practically as much as the more substantial materials, when their comparative life and cost of upkeep are taken into account.

Under the Irish Labourers Acts, nearly 50,000 cottages have been built in Ireland with State assistance for rural workers, with excellent results. There has been a great improvement in vitality and health, and while no attempt has been made to charge economic rents, wages have risen. The beneficial effects of comparison have also stimulated owners to put existing cottages in better order, and building by private enterprise is said not to have been affected, as the low wages paid prevents the serious consideration of providing cottages for these men as a commercial investment. The cottages built are mostly one-story buildings with a living-room and two bedrooms, and cost from £128 to £211, according to locality, the latter figure appearing somewhat high. Rents vary from 4d. to 2s. 9d. a week, the average throughout Ireland being 1s. 1d., and they have been calculated according to the ability of the labourer to pay. The tenants in all cases pay rates, varying from 10s. to 22s. per annum. The committee estimate that 120,000 new cottages are required in rural districts, and shortly after the outbreak of war the Housing Act No. 2 was passed, with the object of encouraging local authorities and public utility societies to embark upon housing schemes, chiefly with a view to lessening possible unemployment in the building trade, and a sum of £4,000,000 is available for advances. Before the war the rate of interest for loans granted by the Public Works Loan Commissioners to local authorities was 3½ per cent., and the annual repayment for interest and sinking fund for a period of 60 years amounted to £4 0s. 2½d. per cent. Notice having been given that the rate of interest would be raised, schemes in process of formation were in some cases checked, and the rate has now been fixed at 4½ per cent. Where a local authority is able to show there is unemployment in the building trade, 10 per cent. of the capital outlay will be advanced by way of free grant, and on this basis the annual repayment for every £100 is £4 3s. 4d., or 3s. 1½d. per cent. more than before the war, equivalent to rather less than 1½d. per week on a £200 cottage. Authorised societies before the war could borrow at 3½ per cent. for 30 years, and 3½ per cent. for 40 years, the annual repayment amounting to £5 8s. 9d. and £4 17s. 3½d. respectively. Under the new Act advances would be made up to nine-tenths of the total expenditure, made up of 10 per cent. free grant, and the remainder by way of loan for 60 years at 5 per cent., the annual repayment amounting to £4 8s. 10d. per cent. These are valuable concessions, although partly balanced by the rise in the cost of building owing to the war, chiefly accounted for by the increased price of timber. No less than 28 Acts of Parliament have been passed dealing with the housing question during the last fifty years, and, in conclusion, I would like to join in the general appeal for a consolidating Act, which would do away with a complicated system of cross-references and greatly lessen the present difficulties of ascertaining the legal position.

ARTIFICIAL ILLUMINATION IN RELATION TO ARCHITECTURAL EFFECTS.*

By S. D. CHALMERS, M.A., Head of the Department of Technical Optics, Northampton Institute.

The great progress in the theory and practice of artificial illumination has provided architects with new materials and resources for producing architectural effects, particularly in relation to the interiors of buildings, and the decoration of halls and smaller rooms. It is true that the illuminating engineer has as yet made little progress in the application of his new methods to these purely architectural problems; it was only natural that he should first turn his attention to the more utilitarian aspects of artificial lighting; his aim has been to produce the illumination requisite for the comfortable use of a room for its ordinary purposes; and economy has been one of his prime considerations. He has, to a very considerable extent, solved the problem of the efficient and economical distribution of the light available. He avoids excessive illumination of any point, and by screening his sources of light reduces the glare, and so is able to obtain the same visual effects with reduced actual illumination. He takes into account the reflection coefficient of his walls and ceilings, the nature of the objects to be illuminated, and the fineness of detail which must be distinguishable. Incidentally, he has made some progress in the illumination of the architectural features and decorations of the rooms. But progress in this latter direction is more dependent on the architect than on the illuminating engineer. It is not always possible to make effective use of artificial light in buildings and rooms which have been designed entirely with a view to their effect in daylight. Just as the architect considers the site and lighting of his building in regard to its outside form and its interior decoration, so he should consider the scheme of interior decorations in relation to the artificial lightings with which it will be used. Some types of decoration are quite unsuitable for artificial illumination, and should be avoided in rooms which are intended to be used almost exclusively in artificial light. Other types are suitable for either illuminant. But the differences between the characteristics of daylight and artificial illumination are such that one cannot assume that good results will be obtained by artificial light, even though the results by daylight are most satisfactory. But under the term of artificial illumination we include such varieties of actual lighting, that much may be done to improve the effect in any given case. It is my object to-night to point out the fundamental similarities between natural and artificial lighting, to indicate how variations in natural lighting have led to important architectural developments, and to show how the results achieved with natural lighting may indicate the successful treatment with artificial lighting. The great contrast between the Classic and Gothic styles is closely associated with the variation of the lighting conditions. In Greece, the conditions were simple, a bright source of light almost always available, and a relatively small amount of diffused light. In the sunlight, clear-cut shadows were produced, and only shallow mouldings were necessary to secure the necessary contrasts of light and shade. This is well illustrated in the columns of the Parthenon, where the sharply undercut mouldings produce clear, sharp bands of shadow. But when buildings in the Classic style are erected in climates like our own, the quality of the light is different, and the features must be modified if the same effect is to be produced; and the proportion of diffused light being greater, it is necessary to deepen the flutings to produce sufficient contrast. This same general characteristic is noticeable in artificial illumination when one bright source is replaced by a number of small ones. It is this same effect of deeper mouldings and flutings that marks the Gothic as contrasted with the Classic architecture, and once more

it is the lighting conditions which determine the extent of the change; the more diffused the light, the deeper must be the moulding. Another case of adaptation to the lighting is the pulvinated frieze in which the surface is lightly curved, so that the upper part intercepts more light than it otherwise would do, and so gives a shading from the bright upper to the dull lower part. This is effective in the case where the light is well diffused, but comes only from a comparatively restricted sky area. This is an intermediate case between the direct sunlight and the wholly diffused light. These same general principles apply also to interior ornament. The more diffuse and less direct the lighting the more is it necessary to intensify the mouldings, carvings, and other relief. When the lighting comes from above in a comparatively narrow beam, the ornament must be in low relief, while a general diffused lighting from in front is more suitable for cases of deeper relief. An illustration of this principle is furnished by the Miserere seats with the low relief above and deep relief below. In most cases of artificial lighting, ornaments on the level of the lights may be in deeper relief than that well above or below. In the same way, it is unwise to illuminate a ceiling with deep mouldings by lights placed too close to the ceiling, as this results in long and deep shadows. When the lighting is very diffuse, it is sometimes preferable to produce the impression of depth by special devices, such as the linen-fold panel of the English and Flemish architecture of the 15th century. Such devices are usually suitable for artificial as well as natural lighting.

Turning now to the possibilities of the artificial illumination of interiors, we find that the conditions are in some respects less, and in others more favourable than those of natural lighting. The daylight usually comes as diffused light from a comparatively large window area, producing very variable illumination throughout the room. It is exceedingly difficult to modify its distribution to any appreciable extent, and the amount is very variable throughout the day and year. On the other hand, the eye adapts itself very readily to the variations of daylight, ignoring all excessive contrast and accepting the variations in colour of the light without noticing them. Not the smallest advantage, perhaps, is that the actual source of light does not come into view, and we are not obliged to devise special methods of screening it. In the case of artificial illumination, the original sources are comparatively small, bright objects which obtrude themselves most unpleasantly if we omit to screen them from direct view. But because the sources are small we can surround them by diffusing screens or reflectors, and materially modify the distribution of the light coming from each source. With modern, properly designed reflectors it is possible to produce almost any desired distribution of the light from practical uniformity to concentration in comparatively small angles in any desired direction. By the judicious placing of sources of light and the proper choice of reflectors we can obtain almost any desired distribution of the light with one limitation that the light coming from each individual source to any point will be coming in a comparatively small angle. Each source would tend to produce well-marked, deep shadows, and care must be taken that the effects of the other sources are to reduce the depth and size of these shadows to the desired amount. In this way the shadows may be made architecturally useful rather than the reverse. It is this possibility of varying the character of the lighting and the change in the distribution almost at will that makes it possible to obtain different architectural effects. The ideal of the illuminating engineer has generally been to produce even and soft illumination throughout the room. But it seems to me that this is not always the most suitable lighting, and that in some cases a more one-sided lighting, with a subsidiary cross or reverse lighting, might be useful employed. But in using this method one must not attempt to imitate the condition

* Read before the Society of Architects, April 15.

of daylight too closely. The variations must be considerably less than those of daylight, because the actual illumination will usually be considerably below that which prevails with daylight, and at this lower illumination the variation is much more readily appreciated. This effect is not materially altered by actually increasing the illumination by artificial light, because of the dazzling effect of intense artificial light. Owing to the adaptation of the eye to the conditions prevailing in artificial illumination, comparatively small variations are effective, and it is unwise to produce strong contrasts between the different parts of the room. Most people find it unpleasant to sit in a well-lighted part of a room while the rest is in comparative darkness. It is on account of this adapted condition of the eye that it is so important to screen the modern sources of high intrinsic brilliancy, and the only effective way is to make the light appear to come from an area much larger than that of the source. The smallness of the size of artificial sources is troublesome when reflecting surfaces, such as varnished wood, are present, and in some cases the reflections are objectionable. They may be reduced by increasing the size of the source or altering its position. The same difficulty of reflection occurs in connection with picture lighting, and care should always be taken to place the sources sufficiently above the picture to make the reflection invisible at the ordinary level of the eye. This generally adds to the difficulty of securing even illumination on the picture, but by properly distributing the light from the source almost any required degree of evenness of illumination can be obtained. Still further difficulties are encountered in regard to coloured ornamentation, and these troubles are accentuated if the illumination on the coloured object is low. The relative brightness of the parts of different colours will change as the illumination is diminished, and it is a wise precaution to secure abundance of light for any coloured ornamentation. Even with this precaution the colour values are unlikely to be exactly the same as with daylight, though the recent attempts to improve the colour rendering by artificial light have met with considerable success. But the rendering of variations of shade in a flat object is almost the same by artificial light as by daylight, and the same may be said of pierced work where the contrast of a carving is enhanced by piercing. Pierced screens are interesting, as showing one of the earliest methods of combining natural with artificial lighting effects. In daylight, the screen is lit from in front, the openings appearing dark to contrast with the screen when the altar is lit up, the screen is seen in silhouette, and the piercings are light. The same effect of interchange of light and dark in natural and artificial lighting is seen in the windows of churches and other buildings. The walls, near the windows, which are of least importance in daylight, are the most prominent features in the artificial light. Their architectural treatment, though making little difference by daylight, may be of the greatest value for artificial lighting.

But there are other methods of artificial lighting to which I would like to refer. In these methods, attempts have been made to imitate the conditions of daylight lighting. An example is the use of groups of lights surrounded by large diffusing screens or reflectors, in imitation of the method of the oculus as used in the lighting of the Pantheon. It is easy in special cases to imitate the effect of this method of daylight lighting, and the method is applicable in large halls or theatres. But the method of indirect lighting approaches most directly to the effects of daylight. In this method the light from the source is sent on to a white ceiling or screen, and is directed downwards to illuminate the room. The absence of marked shadows renders this method very useful for certain purposes, as, for example, the lighting of drawing-offices; but, unless the illumination is very high, the method gives the impression of a poor imitation of daylight, suggesting coldness and wintriness. We interpret this artificial lighting in terms of daylight, and the suggestions that this

daylight carries with it. It is probably on this account that many people prefer the semi-indirect system of lighting, in which part of the light from the source is allowed to pass through the shade, while the other part illuminates the ceiling. In this case the impression of artificial lighting is retained, and the comparison with daylight does not obtrude itself; at the same time, the conditions of shadow are more those of daylight, and the indirect light from the ceiling tends to soften the whole lighting. This method of semi-indirect lighting is specially useful when the ceiling and frieze are worthy of attention in themselves, as, for example, in the beautiful moulded ceilings. In all these cases of indirect lighting it seems preferable to show sources which illuminate the ceiling, even if greater part of the light be really derived from concealed sources. There are, however, a number of cases in London, where the ceiling has been lit entirely by means of concealed lights, and the effect has not been happy. These lights produce beautifully even lighting on the ceiling, but one unconsciously asks where does the light come from, and the only explanation is that there must be an opening between the walls and the ceiling, and apparently it must extend all round, there being no distinctive direction in which the light comes, and ceilings which are unsupported are uncanny. In one of these cases the effect was much improved by the use of a number of visible sources which apparently illuminate the ceiling. Thus, as regards interior illumination, the conditions are somewhat different, for artificial and natural lighting. But each has its advantages, and by judiciously using the resources of artificial lighting it should be possible to obtain quite as good results as with natural lighting; but this is a matter for the architect as well as the illuminating engineer. New methods and arrangements of lighting are required. In the cases where rooms are to be used only or mainly by artificial light, the architectural features should be designed in relation to the actual method of lighting to be employed. When few, but large, sources of light are to be used, the conditions approximate to outside natural illumination, and models of ornament and architecture may well be sought in Classical types, but when numerous smaller sources are to be used, the conditions approximate more to the Gothic conditions, and mouldings and ornamentation of this style might well be studied in connection with their value in artificial light.

Another interesting problem which I can only touch on lightly is the illumination of the exterior architectural features of a building. When the aspect is a southern one, the same conditions as in daylight may be approximated to by the use of one large source of light high up in front of the building, and a number of smaller sources placed lower down and distributed along the length of the building. When the aspect is a northerly one, the whole lighting should be by a number of small sources evenly distributed in front of the whole building. Occasionally friezes can be well lit by concealed lights above the frieze, the proper distribution of the light being secured by the use of suitably designed reflectors. In this case, again, the difference between the treatment of high and low relief is important, and the effect of the high relief is even more exaggerated for statues or very deep mouldings, which require front rather than high lighting.

The conversion of the new Stationery Buildings at the corner of Waterloo road and Stamford-street, S.E., into the King George Hospital is being pushed forward. Mr. Reginald Blomfield, R.A., has arranged to take charge of the planning and the execution of the roof-garden.

The Whitney Memorial Driveway scheme is being promoted by the Provincial Government of Ontario and the city of Ottawa to perpetuate the memory of the late Sir James Whitney by building a road from Ottawa through Williamsburg township to the St. Lawrence River, at an estimated cost of 450,000 lsd. Plans are being prepared by Mr. J. Hilliard, of Ottawa.

COMPETITIONS.

CANBERRA, AUSTRALIA.—The competition for the Federal Parliament House, Canberra, has, owing to the war, been withdrawn for the present until a more favourable time occurs, when the matter will be revived, and architects will have an opportunity to prepare designs as originally contemplated.

ST. HELENS.—The designs submitted in the competition for police buildings and fire-station, St. Helens, will be exhibited in the Assembly-room of the Town Hall for inspection of the competitors and professional journals on the 29th and 30th inst. and the 1st of May, from 9 a.m. to 5.30 p.m. A public exhibition will be held later. Those who wish to see the plans at this private view must present their credentials at the Engineer's office on the days named. The assessor has placed the premiated designs in the following order, their authors being thus stated:—1st, Mr. Joseph Sunlight, 4, St. Anne's-square, Manchester; 2nd, Messrs. Cleland and Hayward, Wolverhampton; 3rd, Messrs. C. T. Adhead and Percy H. Topham, Manchester. A meeting will be held this month with reference to this award of the premiums.

WHITEHAVEN HOUSING SCHEME COMPETITION.—In consideration of the following undertaking contained in a letter from the Town Clerk of Whitehaven, dated March 30, 1915:—"With regard to the appointment of the author of the design placed first as architect of the buildings, the intention of my committee has always been that the successful designer should be the architect, unless there was some objection to this being so," the Competitions Committee of the Royal Institute of British Architects desire to withdraw the warning to members against this competition.

In the chapel of St. George's College, Quilmes, near Buenos Aires, a new organ, built by Messrs. Hele and Co. of Plymouth, has just been erected.

Mr. W. Thompson, A.M.Inst.C.E., deputy borough engineer and surveyor of Burton-on-Trent, has been appointed borough surveyor of Mansfield. Mr. Thompson has held his post at Burton since 1903.

A Paschal candlestick has been presented to St. Frideswide's Church, Oxford, by an anonymous parishioner, and, placed on the north side of the altar, makes an imposing addition to the chancel. It is of oak, and stands 8ft. high.

At their last meeting the city council of Manchester adopted a recommendation by the water-works committee appointing Mr. L. Holme Lewis, engineer and manager of the hydraulic-power department, as engineer to the water-works department at a salary of £350 per annum.

No European pine-trees will be permitted to be imported into the United States after July 1, a quarantine order to this effect having been signed by the American Secretary of Agriculture. This action has been taken to save American pine-trees from the pine-shoot moth, which has long done much damage in European forests.

The old Assay Office at the corner of Broad and Nassau-streets, New York, built from the designs of William Strickland (1787-1854) in 1823, in a Roman type of the Georgian style, is about to be demolished by the United States Government, who have presented the façade to Mr. Robert W. de Forrest, president of the Metropolitan Museum of Art. The front will be re-erected as part of a museum building intended to house Americana.

The Board of Education have issued a circular calling the attention of local education authorities to the Treasury restrictions on borrowing, and to the necessity for economising labour. The Board suggest that, while work on the provision and improvement of school buildings will have to be postponed, certain measures should be taken during the period of restriction to enable the postponed work to be resumed after the restrictions are moved, with the least possible delay. The Board also say that, in view of present circumstances it may prove necessary for them for a time, to acquiesce in the continuance of unsatisfactory conditions which in normal times would call for speedy removal.

PROFESSIONAL AND TRADE SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Members of this association paid a visit on Saturday afternoon, by permission of the Edinburgh Merchant Company, to the new buildings in connection with the Edinburgh Ladies' College, Queen-street. A party of between fifty and sixty ladies and gentlemen were met by the architect, Mr. Hippolyte J. Blanc, R.S.A., F.R.I.B.A., who conducted them over the buildings. Mr. Blanc at the outset explained the plans, and in the course of the tour of inspection he gave an interesting description of the principal features of the buildings. At the conclusion of the inspection, Mr. T. Forbes MacLennan, R.I.B.A., president of the Architectural Association, moved a vote of thanks to the Edinburgh Merchant Company and to Mr. Blanc. He said, Edinburgh as a community was fortunate in having a body like the Merchant Company, who could afford to do work of that kind, and do it well. Mr. Blanc, he said, had carried through his task very efficiently, particularly in the lighting of the corridors, which was exceptionally well managed, considering that there were high buildings all round the school. The new building was a scholarly piece of work. Mr. Anderson, Convener of the School Committee, who spoke on behalf of the Merchant Company, said their desire was to have a first-class school, equipped with everything that modern educational ideas had suggested for the benefit of the scholars, and no money had been spared in achieving that object. Mr. Blanc replied.

SCOTTISH ECCLESIOLOGICAL SOCIETY.—On Saturday afternoon the members of the Scottish Ecclesiological Society visited Carnwath and Carstairs. Between forty and fifty members took part in the excursion, including the Rev. H. J. Wotherspoon, D.D., the president, Sir James Balfour Paul, C.V.O., LL.D., Mr. F. C. Eeles, Mr. Thomas Ross, LL.D., Mr. Moir Bryce, Mr. W. Rae Macdonald, F.F.A., and Mr. James Wilkie, S.S.C., honorary secretary. At Carnwath station brakes were in waiting to convey the party to view the old Aisle, which is all that remains of the Collegiate Church of Carnwath, entry to which had been granted by Sir Simon Lockhart. The building, which is complete in itself, was described by Dr. Ross, who gave a sketch of its history from the time when it was constituted a prebend of Glasgow by various Papal Bulls, the last being in 1186. The existing monument to Hugh, Lord Somerville, and his second wife, Lady Janet Maitland of Lethington, was seen, and the story of the family alluded to. Dr. Ross called attention to a still unnoted and unknown memorial of Lady Somerville's charity, in the shape of a sculptured tympanum of a dormer window from Cowthally Castle. It now occupies a position in the neighbourhood, from which he urged it should be rescued. A companion sculptured stone, depicting a figure playing on a stringed instrument, was referred to as perhaps the finest piece of sculpture decoration of the Renaissance period in Scotland. The drive was then continued to Carstairs Manse. The interesting 15th-century Crucifixion-stone found in the churchyard, and now set up in the vestibule of Carstairs Church, was described by Dr. Ross. It is similar to one in Sligo Abbey, but evidently much older. The different characteristics of the crosses found in the East and West of Scotland were also described, and the old Communion plate was shown. The society then drove past the village green and the picturesque thatched houses that are still a feature of the place, through the policies to Carstairs House, where the Roman road and many other objects of antiquarian and ecclesiological interest were pointed out. The return journey was made by rail from Carstairs.

SOCIETY OF ARCHITECTS' CONCERT.—Under the auspices of the Society of Architects, a very successful concert was given in the King's Hall, Holborn Restaurant, on Wednesday evening.

The chair was occupied by Major E. C. P. Monson, F.R.I.B.A., President of the society, and the numerous audience included many architects and ladies. Miss Annie Bartle (soprano) and Miss Nellie Walker (contralto) rendered in excellent style patriotic songs. Miss Winifred Mausfield gave Lawrence's "Kitty," and other melodies of lighter character. Mr. Robert Carr's fine baritone voice was heard to advantage in leading the National Anthems of the Allies, in which the audience very heartily joined, and in the popular "Up from Somerset." Humorous selections were contributed by Mr. George Blackmore and Mr. Will Edwards, and Mr. George Bolton gave musical sketches at the piano. A feature of the evening was the series of clever recitations of Cockney life and humour by Mr. Charles Pond, which, like many other items, was deservedly encored. Mr. Thomas Noakes was the musical director and accompanist. During the evening the Chairman explained that the concert took the place of the annual dinner of the society, which was felt by the council to be inappropriate during the war. As one who had served two and twenty years in the old Volunteer and the Territorial forces, and had now been appointed to the London Regiment of Artillery, he appealed for recruits to the D Company of that body. The surplus from the concert receipts would be given to the Architects' War Relief Committee. A collection in the hall, taken up at the chair man's suggestion, brought an additional sum of £10 2s. 6d.

The Local Government Board have sanctioned a loan of £14,250 to the Foleshill Rural District Council for housing schemes at Foleshill and Bedworth.

The urban district council of Rhyl propose to repair and improve the promenade of their pier, from plans by their surveyor, at an estimated outlay of £4,300.

Mr. William Newton Dunn, F.R.I.B.A., of Glenfeen, Wray Park, Reigate and of Bucklersbury, who died on Dec. 23, aged sixty-six, and whose estate was valued at £108,223 gross, with net personally £61,576, left £500 to his clerk, Harry Bowen.

To the streets and buildings committee of Edinburgh Town Council the burgh engineer has submitted estimates for the proposed expenditure on the public sewers during the next financial year. These show a proposed reduction of about £3,000 as compared with previous years.

The Riddell Hostel in connection with the Queen's University, Belfast, in course of erection on the Stranmillis-road, is nearing completion. The architect is Mr. W. H. Lynn, R.H.A., Donegall-square, North Buildings, Belfast, and the builders are Messrs. Henry Lavery and Sons, Ltd., Cambridge-street, in the same city.

The Corporation of London decided on Tuesday to hold a loan exhibition in the Guildhall Art Gallery of war pictures by artists of the Allied nations France, Russia, and Belgium—together with selected examples by British painters. It was referred to the library committee to take steps in the matter, and the committee were further authorised to make a charge for admission of 1s. per head on not more than one day a week.

A memorial tablet to the sea post-officers who perished in the foundering the ill-fated steamship Titanic has been made from the bronze of one of the Titanic spare propeller-blades, and is to be placed in the public portion of the Southampton Head Post Office, in the High-street. At the head of the tablet is a trophy composed of the British and American flags, beneath the inscription in raised letters. Messrs. Lankester and Son, of Southampton, have executed the memorial.

At the last meeting of the sewage-disposal committee of the Crompton Urban District Council the clerk stated that, in reply to an application to borrow £2,490 for the proposed extensions to Low Crompton sewage-works, the Local Government Board had written stating that they could not sanction the borrowing of money at present. They were, however, prepared to consider the application with a view to the work being put in hand directly after the end of the war. He had asked them to go on with the inquiry. With regard to the refuse-destroyer, a loan of £4,012 had been sanctioned.

ARCHÆOLOGICAL.

EXCAVATIONS AT ST. AUGUSTINE'S ABBEY, CANTERBURY.—Sir W. H. St. John Hope, F.S.A., has communicated to the Kent Archæological Society the result of the recent excavations in the Church of St. Augustine's Abbey, at Canterbury. Within the last few weeks it has been possible, he says, to extend the earlier operations on the site of the choir westwards, and with most surprising results, for there are now actually to be seen the veritable remains of the despoiled tombs of Archbishops Laurence, Mellitus, and Justus, with portions of the original flooring, and part of what may be the altar of St. Gregory, that stood between the tombs of Laurence and Augustine. There is also the empty grave in which the body of St. Mildred was laid by Wulfrie when he destroyed the presbytery. The tombs of the three archbishops lie in a row as described, by Goscelin, against the base of a thin outer wall built of Roman bricks and plastered within and without. Whether there are any corresponding remains of the tombs of St. Augustine and of Deusdedit and Honorius, which lay to the south, has yet to be seen. At present their sites are overlaid by the huge sleeper-wall, 10ft. wide, of the Norman arcades, but it may be possible, without actually destroying this, to burrow underneath, and meanwhile explorations are now in progress further south. In any case, there seems to be no reasonable doubt that we have established the place of the actual porticus or aisle in which Augustine and his brethren were originally buried, and that the thin outer wall belonged to King Ethelbert's church, which ought, therefore, to have been of basilican plan. To the east of the porticus are the beginnings of a much wider and later apse that evidently belonged to some extension of the building at this point. The excavations are being carried out under the supervision of the authorities of St. Augustine's College, Canterbury, and subscriptions to help on the work should be sent to the Sub-Warden of the College.

The salary of Mr. W. Fowlds, borough engineer and surveyor of Keighley, has been increased by £25 per annum.

A Wesleyan church is being built at Carcroft. The architect is Mr. O. M. Thorp, of Long Eaton, and Mr. C. Sprakes, of Doncaster, is the contractor.

At Forestfach, on Wednesday, a Local Government Board inquiry was held into an application by the district council for sanction to borrow £20,500 for works of sewerage.

The Tees Conservancy Commission was held at Middlesbrough, and have sanctioned the plans submitted by Messrs. Pease and Partners, Ltd., for a new wharf on the foreshore at Cargo Fleet, subject to the approval of the Board of Trade.

At the meeting on Monday of the urban district council of Rhyl a discussion took place as to the proposal of the road committee to increase the town surveyor's salary from £220 to £260 per annum. It was pointed out that at Colwyn Bay the surveyor was paid £350. It was decided to increase the salary to £250 for one year only.

At a meeting of the Stockton Town Council on Tuesday, Mr. T. P. Frank has been chosen as borough surveyor, in succession to the late Mr. M. H. Sykes, at a salary of £500 per annum, rising to £700. Mr. Frank is at present at Newark, has sixteen years' experience of his profession, and is thirty-four years of age. Starting at Huddersfield, he went to Dewsbury, and then to Ripon, and subsequently secured the appointment at Newark. There were 126 applicants for the appointment.

Hitherto the Mansion House, E.C., though adorned with fine sculpture purchased at the Great Exhibition of 1851, has been all but destitute of paintings. The Corporation have now placed in the State Drawing Room four pictures from the Guildhall Art Gallery. Two of them are the full-length portraits of King George III. and Queen Charlotte, painted by Allan Ramsay, and bought by the Corporation in 1764. The others are portraits of Queen Caroline and her daughter, the Princess Charlotte, by James Lonsdale. They were presented to the Corporation by Queen Caroline in 1820, the year before her death.

Our Illustrations.

NEW MUNICIPAL BUILDINGS. KARACHI, INDIA.

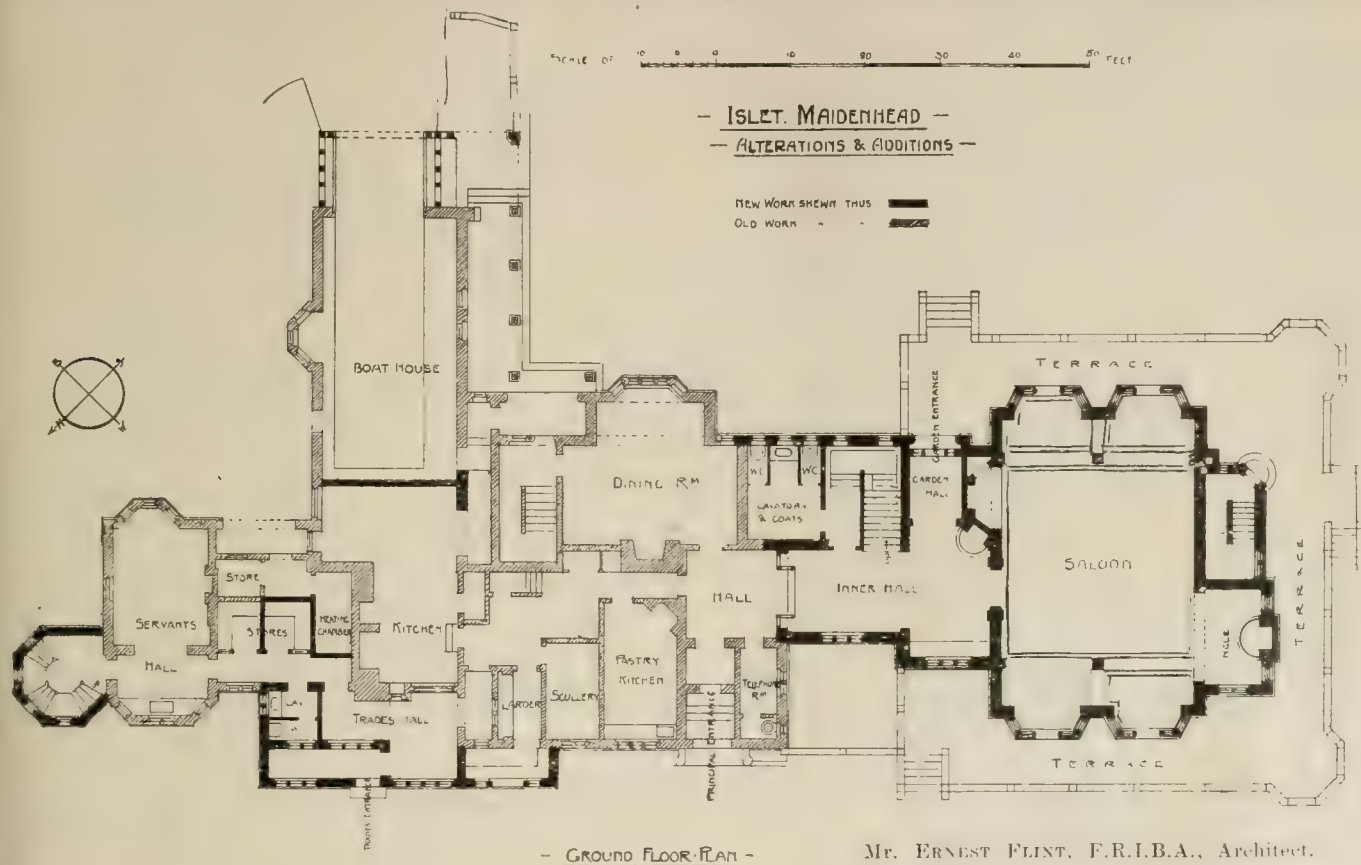
An open competition for these buildings was held in 1910, and we published an elevation with plans of the "selected" design in our issue of January 13, 1911, but very material changes have since been made. The revised plans remain very nearly like Mr. Wynnes' first scheme. The original competition design showed the "bulged" form of dome, and certain other Hindoo-Saracenic features; but as most other important buildings in Karachi are more or less of a Renaissance character, it was subsequently decided to remodel the design on these lines,

(left) Public Gallery and upper part of Council-chamber, also Supervisor of Schools; (right) Engineer's Department. The buildings in the "compound" are as follows, viz.:—Stables, carriage-houses, electric generating station and houses for chowkidar (caretaker), mali (gardener), and engine attendants. The building, if erected in England, would cost over £100,000, but its cost in India will not exceed £37,000. The architect is Mr. James Cumming Wynnes, F.R.I.B.A., of Edinburgh.

"ISLET," MAIDENHEAD.

This house was built for Mr. Edward Wagg. By various stages it has been considerably developed from what was originally a boathouse, erected on the banks of the Thames between Boulter's Lock and Cook

whereas they have now nine 'buses running regularly every day, including Sundays, between the tramways centre and Avonmouth, giving a twelve minutes' service. On Saturdays and Sundays, and other special occasions sometimes as many as fourteen or fifteen 'buses are run. The site of the new garage is a large corner plot obtained from Mr. Napier Miles, fronting the main road and facing the Miles Arms. It has a frontage of 120ft. along each side of the corner. The garage will accommodate about 20 'buses, a dozen cabs, and about 20 commercial motors. The building also gives accommodation for general offices, waiting-rooms, mess-rooms for the workmen, workshops, and storerooms. The walls are faced with Cattybrook orange red facing bricks to sill height, the building being finished with roughcast above and



and we to-day illustrate a perspective of the building now being erected and two plans of the chief floors. The foundation-stone was laid in January, 1913, by His Excellency Lord Sydenham, Governor of Bombay. The detail which we reproduce with the view was taken from the architect's working drawing. It will be noticed that no ashlar course exceeds eight inches in height, and that all square-headed openings are flat-arched. The reason for this form of construction is that the local limestone "Dangadra," with which the buildings are being faced, can only be obtained in small flat stones. Owing to the great expansion and contraction of steel in the Karachi climate, it was decided that all beams should be of teak, and the floors are constructed in Indian fashion of teak joisting and boarding, covered with a lime-concrete, which is finished with tiles. The entrance-halls, main staircase, and principal verandahs are finished with a colour treatment of marble and dressed stone. The wood finishings throughout are of teak, to withstand the ravages of the white ant. All the rooms are protected by 10ft. deep verandahs, and artificial draughts are created by electric fans. The accommodation provided is as follows viz.:—Ground floor, (left) Refund and Assessor and Collectors' Departments; (right) Auditor, Health Department, and Pay Office. First floor, (left) Council-chamber and Library; (centre) President's room and Committee and Reception-rooms; (right) Chief Officer's Department. Second floor,

ham, overlooking the river and Taplow woods upon the opposite side of the river. The earlier part was erected from the designs of the late R. N. Wornum, F.R.I.B.A., and for the later work Mr. Ernest Flint, F.R.I.B.A., of 80, Coleman-street, E.C., has been the architect. The contractors were Messrs. J. K. Cooper and Son, of Maidenhead. The new portion has been raised so as to place the ground floor 4ft. above the site-level, in order to escape damage from flood, to which the earlier part of the house was subject; hence the terrace surrounding the building is a later addition. The illustrations sufficiently show the style and nature of the work. The carving in wood in the hall, staircase in oak, and in the saloon is executed in lime-tree and American white wood. The designing and arranging of the furniture and curtains and carpets was left in the hands of the architect. Thus a satisfactory and harmonious whole, both in colour and design, has been insured.

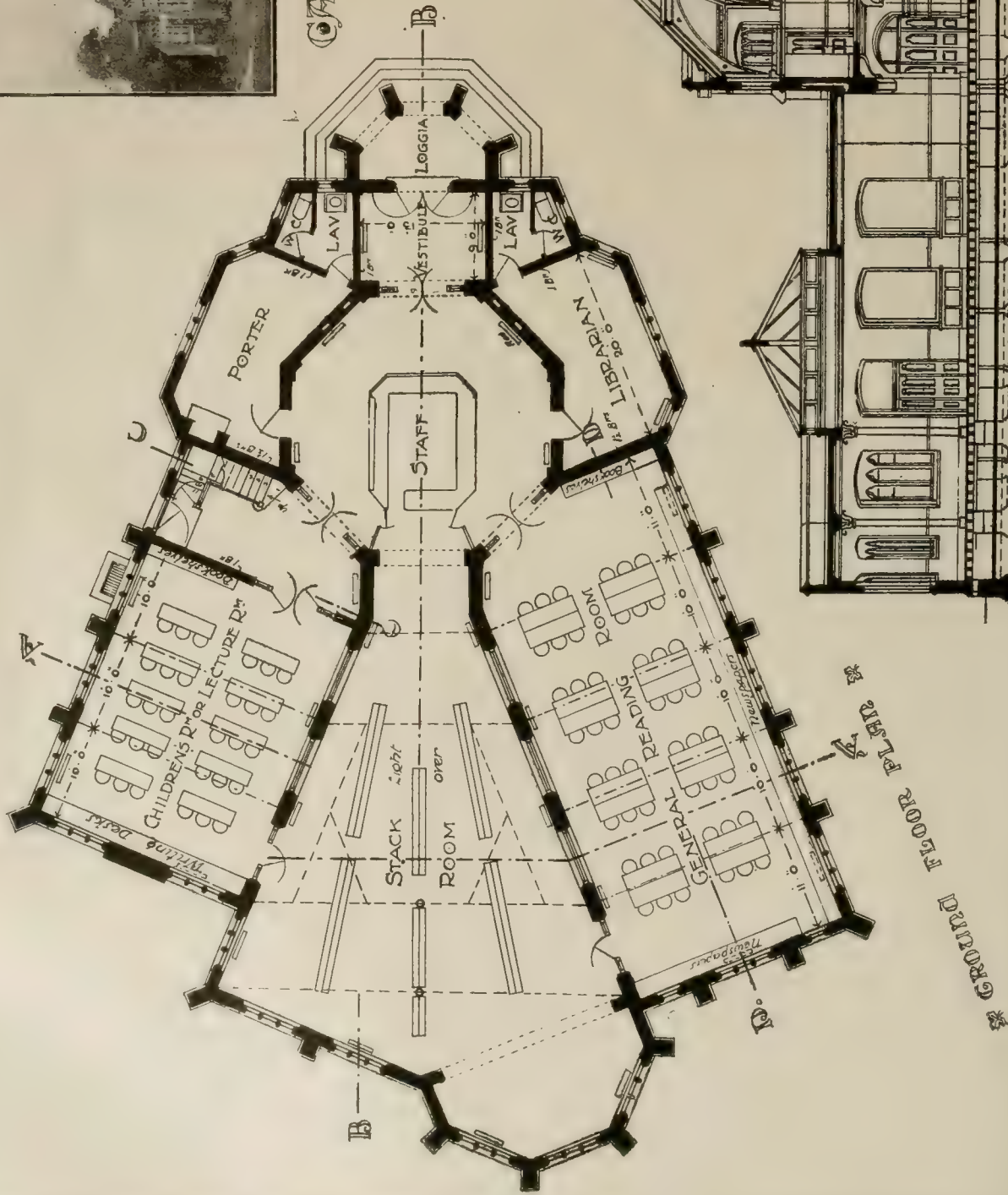
GARAGE AND OFFICES AT AVONMOUTH, BRISTOL, FOR THE BRISTOL TRAMWAY AND CARRIAGE CO., LTD.

This new garage is being built at Avonmouth by the Bristol Tramway and Carriage Co., Ltd., and it is expected that the structure will be completed by the end of this month. That the importance of the requirements of Avonmouth are recognised by the company is shown by the fact that last year the company ran two 'buses to Avonmouth,

having modelling introduced in appropriate places. The entrance to the offices is at the corner, over which a clock-turret has been designed. Broseley tiles cover the roof. Provision has been made for extensions when they become necessary. The architect is Mr. W. H. Watkins, F.R.I.B.A., of 15, Clare-street, Bristol, and it will be seen that the design is somewhat on the lines of the company's depots, which have also been designed by him. The contractor is Mr. F. Wilkins, of Bristol.

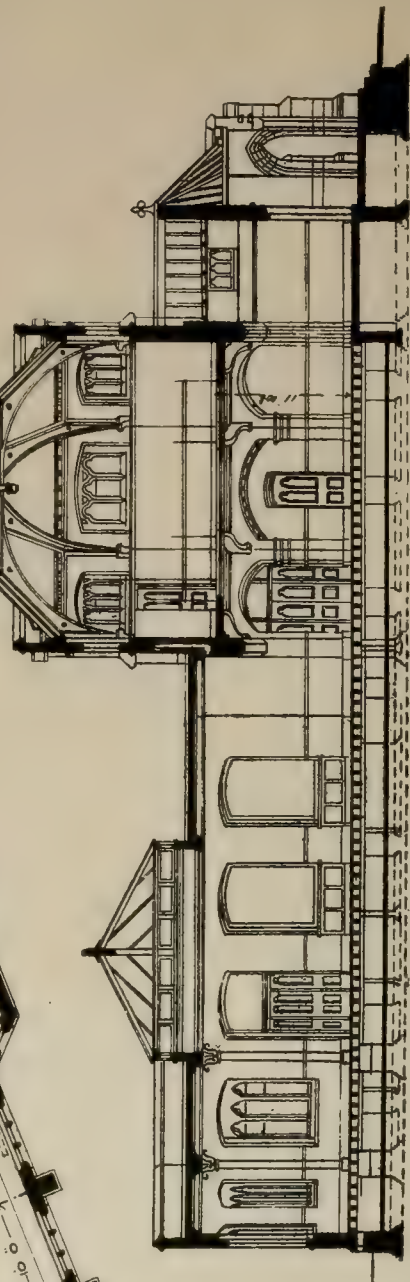
CARNEGIE LIBRARY, DIDSBURY, MANCHESTER.

We published some drawings and photographic view of the Chorlton-cum-Hardy Library in our issue of March 26, with some particulars, and a reference was made to the similar branch library at Didsbury, of which we give a view, section, and plan to-day. Both buildings have been carried out under the supervision of the City Architect, Mr. Henry Price, Manchester. The shape of the sites, as already noticed, necessitated a corresponding likeness in the lay-out of the arrangements; but in this case, instead of a domed and Classical kind of treatment, the Didsbury Library conforms to the style best known as Modern Gothic, with a clerestory gallery above the octagonal public hall, where the staff counter for the open-access library is located. The large scale of the plan and section enables all the essential particulars to be gathered from our illustration.



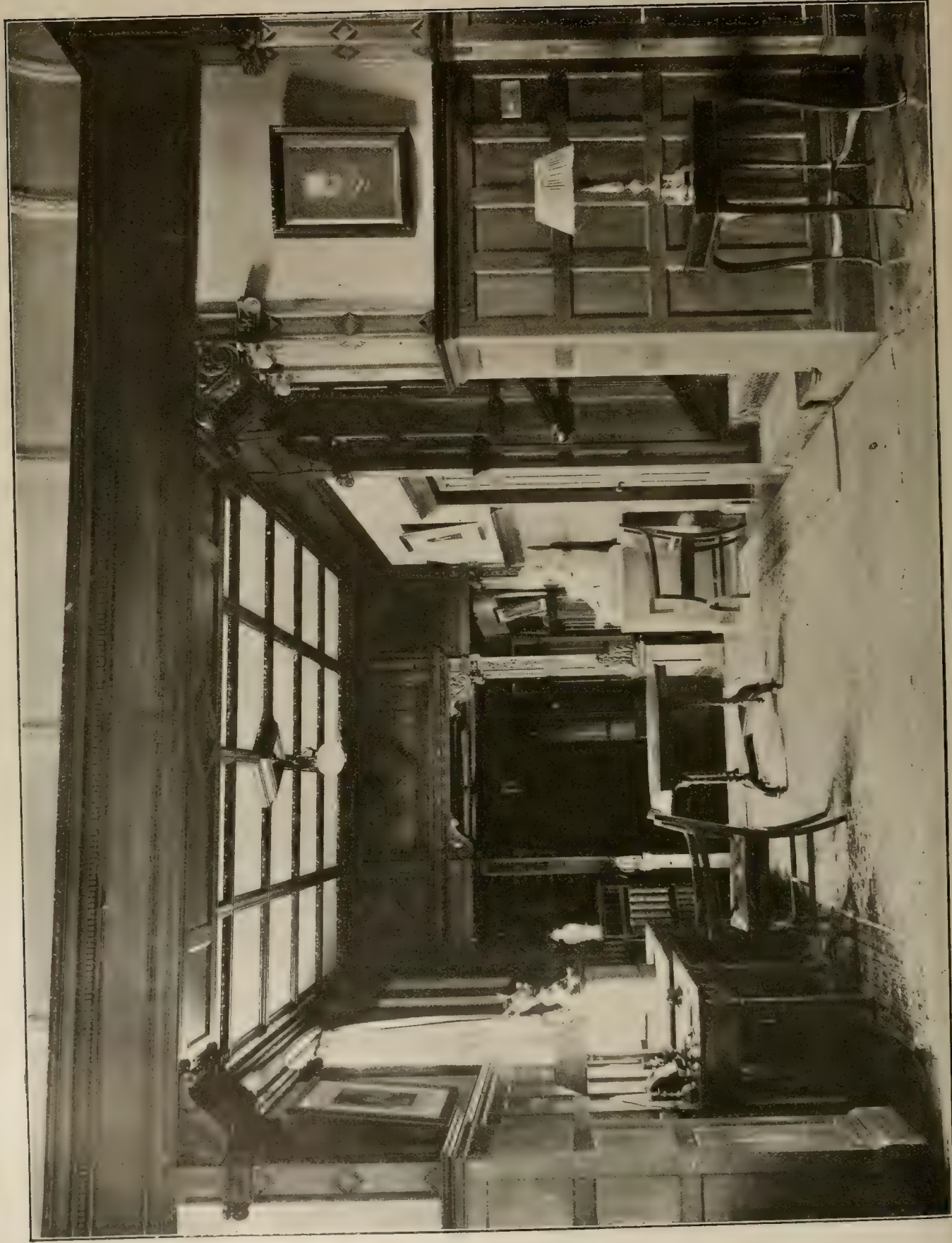
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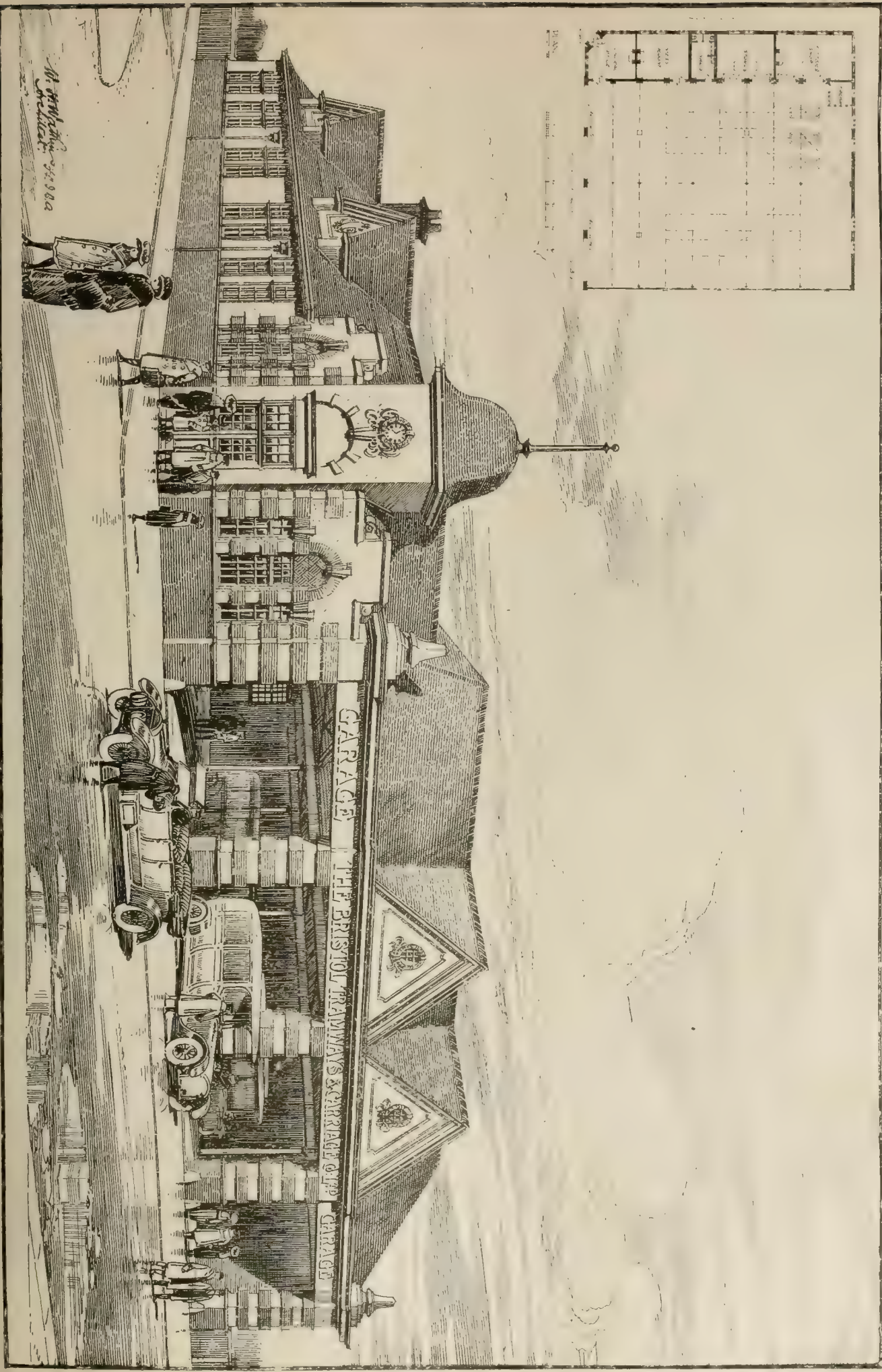




THE BUILDING NEWS. APRIL 16, 1915.



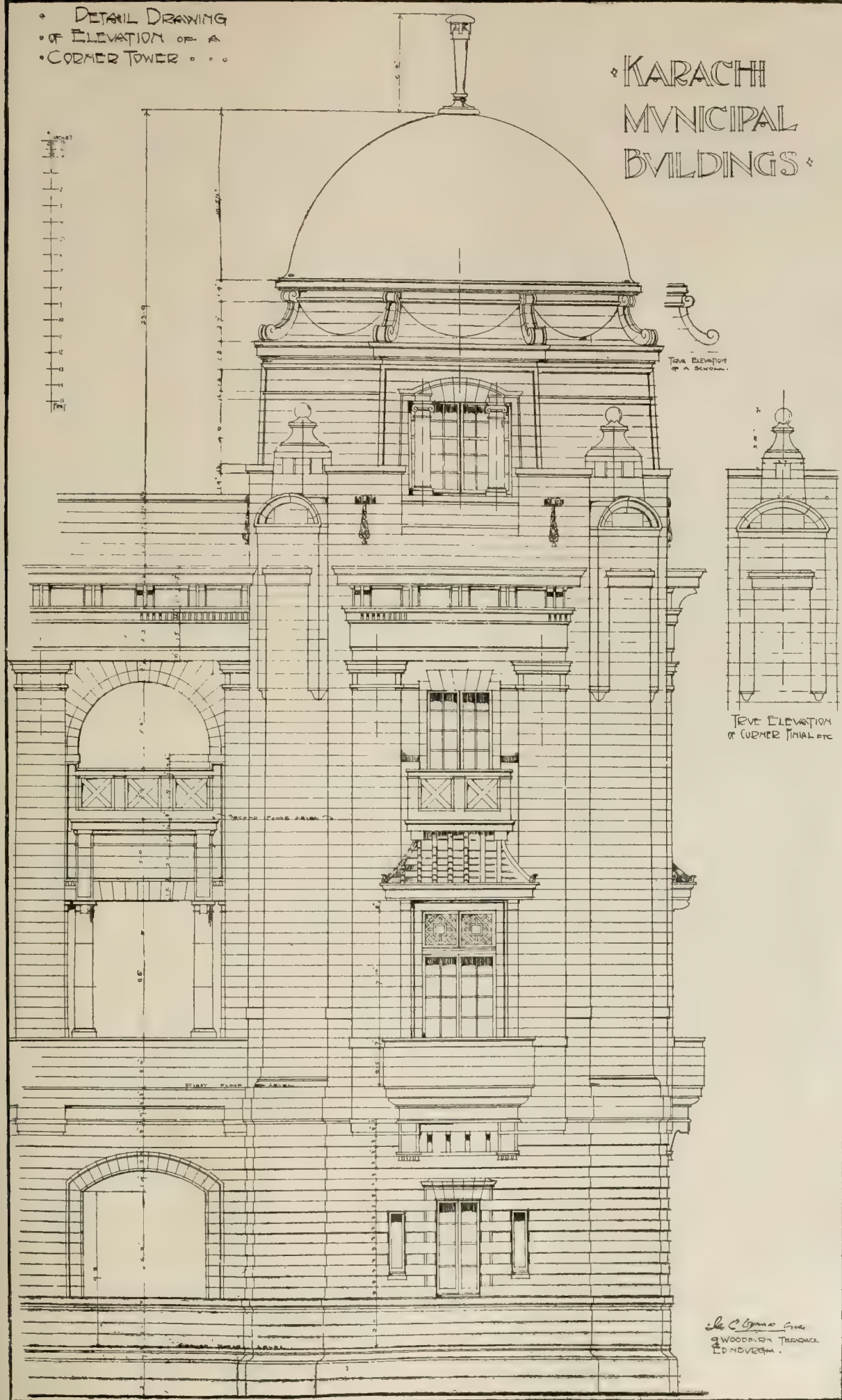
THE HALL, "ISLET," MAIDENHEAD.—Mr. ERNEST FLINT, F.R.I.B.A., Architect.



GARAGE AND OFFICES AT AVONMOUTH, FOR THE BRISTOL TRAMWAY AND GARAGE COMPANY, LIMITED.

- DETAIL DRAWING
- OF ELEVATION OF A
- CORNER TOWER • • •

KARACHI
MUNICIPAL
BUILDINGS



NEW MUNICIPAL BUILDINGS, KARACHI, INDIA: DETAIL OF FRONT.
Mr. JAMES CUMMING WYNNE, F.R.I.B.A., Architect.

Building Intelligence.

WALKER-ON-TYNE.—A report of the housing committee dealing with the proposed scheme on the Walker estate was issued to the members of the Newcastle-on-Tyne City Council on Saturday. The committee propose to utilise an area of 28½ acres situated to the west of Walker Park abutting upon Serogg-road and Wharrier-street. On this site it is proposed to erect 688 dwellings of five types—four on the flat principle, two stories high, and semi-detached, and the fifth of self-contained houses. The accommodation to be provided will include bath and hot-water apparatus in each dwelling, as well as a gas-boiler. The proposed rentals for the flats range from 5s. per week to 8s. 3d. per week—the accommodation for the latter being a living-room, three bedrooms, scullery, etc.—and the proposed rental for the self-contained houses is 9s. a week. The estimated capital cost is £117,781 16s. 8d., and the estimate of expenditure and revenue shows an annual surplus of £408 3s. 10d. The committee recommend the council to approve the scheme, and apply for the necessary borrowing powers for the £117,781 16s. 8d. proposed to be expended. In a further report, alterations in rental are recommended as a result of the finance committee's observations, and these reduce the estimated surplus to £306 13s. 9d.

SHREWSBURY.—A stage in the development of the borough was reached on Thursday in last week by the formal opening of the Wingfield Garden Suburb, provided by the corporation in the Ditherington district, on the north side of the town. The estate, of 6½ acres, is triangular in shape, and the houses are built twelve to the acre, thus allowing for good gardens, and a playing green for children, under observation from every house. The houses are built in pairs and in blocks of three and four, and are self-contained. The usual back extensions, which shut out light and air from the rooms at the east, are omitted, and this also does away with the usual dismal little back-yards. Sixty-three houses have been erected, at a cost of £1,110 for land, £11,826 for building, and £590 for fencing—in all, £13,626. The houses are built from four different plans. Design A:—Four houses per block. Accommodation—End houses, ground floor: Living-room, 13ft. 6in. by 14ft. 6in. by 9ft. 0in. high; scullery bathroom, 11ft. by 9ft. by 9ft. 2in. high. First floor: Three bedrooms, 13ft. by 14ft., 11ft. by 9ft., 6ft. 6in. by 9ft. Middle houses, ground floor: Living-room, 13ft. by 13ft. 6in.; scullery bathroom, 7ft. by 10ft. 1½in. First floor: Three bedrooms, 16ft. 7½in. by 13ft. 6in., 10ft. by 9ft., 6ft. 6in. by 7ft. 6in. Each house contains larder, coals, and w.c. on ground floor; rent, inclusive of rates, 4s. 6d. per week. Design B:—Semi-detached. Accommodation—Ground floor: Living room, 13ft. by 13ft. by 9ft. high; scullery bathroom, 8ft. 6in. by 10ft. 6in. by 9ft. 2in. high. First floor: Two bedrooms, 13ft. by 13ft., 13ft. by 8ft. 6in. Larder, w.c., and coals on ground floor; rent, inclusive of rates, 3s. 9d. per week. Design C:—Semi-detached. Accommodation—Ground floor: Living-room, 18ft. 6in. by 12ft.; scullery bathroom, 8ft. 9in. by 9ft. 1½in. by 9ft. high. First floor: Three bedrooms, 8ft. 9in. by 9ft. 1½in., 11ft. by 11ft. 9in., 12ft. by 9ft. 1½in. Larder, w.c., and coals on ground floor; rent, inclusive of rates, 4s. 6d. per week. Design D, in blocks of three houses:—Accommodation—Ground floor, end houses: Living room, 13ft. by 15ft. by 9ft. high; scullery bathroom, 8ft. 6in. by 9ft. 7½in. by 9ft. 2in. high. First floor: Three bedrooms, 12ft. 9in. by 13ft., 9ft. 6in. by 9ft. 10in., 6ft. 7in. by 8ft. 6in. Larder, w.c., and coals on ground floor; rent, inclusive of rates, 4s. 6d. per week. The roadways are of light construction, 18ft. wide with 5ft. grass margin, and 6ft. gravel foot-path; kerbing and channelling are omitted. The fencing dividing the houses and gardens is rustic chestnut pale fencing. The architect was Mr. A. E. Williams, of 12, High-street, Shrewsbury. The building

contract was let to Mr. G. E. Probert, of Bilston, but in consequence of his death soon after commencing operations the contract was assigned to Messrs. J. Hicken and Sons, of Willenhall, who have completed the work.

CHEADLE, STAFFS.—The opening of the newly-erected cottage homes at Cheadle took place on Friday. The building consists of two semi-detached homes, containing accommodation for twelve children in each home. The building is of brick and tile, and is faced with pebble-dashing, all the windows having red rubber arches. The kitchen and hall are laid with adamantine quarries and the day-rooms with wood blocks. The accommodation on the ground floor of each home comprises kitchen, hall, day-room, and scullery, bathroom, and out offices, and on the first floor bedroom for younger children, small bedroom for older children, foster-mother's room and sick-ward. The buildings have been erected by Messrs. Tompkinson and Betteley, builders, Longton, at a cost of £1,800. The plans were prepared by Messrs. Bibby and Wright, architects, Cheadle.

The east and west windows of the parish church of St. James, Thornham, near Rochdale, have this week been filled with stained glass as memorials.

Plans by Mr. T. F. Tickner, F.R.I.B.A., of High-street, Coventry, have been adopted, and tenders will be obtained, for a parish mission hall at Stoke-next-Coventry.

A laundry which has been added to the general infirmary at Stoke-on-Trent was opened on Friday by the Earl of Lichfield. Mr. H. T. Sandy was the architect. Messrs. Easley and Sons the builders, and Messrs. Summerscales, Ltd., supplied the machinery. The outlay was £2,800.

A well-known Stirling man in the person of Mr. William Battison, town's foreman, passed away on Tuesday week at the age of seventy-six, death being due to heart-failure. Mr. Battison was the oldest employee of the corporation, having been over forty-two years in its service, under successive masters of works.

At the last meeting of the Aberdeen Town Council, by a majority the financial committee recommended that a sum of £500 be voted as a gratuity to Mrs. Dyack, widow of Mr. William Dyack, in recognition of his lengthened connection with the corporation as burgh surveyor. On a division, the council resolved to give £400.

At the mission church, Denton Burn, near Newcastle-on-Tyne, there was dedicated on Saturday an oak reredos and panelling, brass altar-lectern, alms-dish, and other gifts. Mr. S. Eastern, Newcastle-on-Tyne, has designed and erected the reredos. The mission church was built in 1865 from designs by the late Mr. Hicks, of Newcastle.

A stained-glass window has been erected in the chancel of the parish church, Bangor, County Down, in memory of the late Dean Maguire. The subject is the Building of Solomon's Temple, in reference to the late Dean's work which resulted in the erection of Bangor Parish Church. The window is by Messrs. Heaton, Butler, and Bayne, London.

Mr. Karl Bitter, a well-known Austro-American sculptor, died in hospital in New York on Saturday as a result of injuries received through being knocked down by an automobile. Mr. Bitter was forty-seven years of age. He was a native of Vienna, and went to America in 1889. His work has been shown at various American Expositions, notably those of Chicago, Buffalo, and St. Louis.

The Perthshire County Council, after seeking advice from the Road Board, have decided to proceed with their scheme for the improvement of the roads in the Killin district. The works have already been commenced, the contract having been taken by Messrs. King and Co., Ltd., of Glasgow. Mr. J. D. McArdish has been appointed clerk of works for the roads, and Mr. John Cramb clerk of works for the bridges.

Lord Raglan, Lieutenant-Governor of the Isle of Man, has unveiled a commemorative mural tablet to mark the site of the house in Lord-street, Douglas, in which the late Prof. Edward Forbes, F.R.S., the distinguished geologist and naturalist, was born on February 12, 1815. The tablet is of grey slate, mounted on freestone, and is surrounded by a border of mixed Celtic and Scandinavian design, taken from Manx Runic crosses.

Correspondence.

ELECTROLYSIS OF CONCRETE STRUCTURES.

To the Editor of the BUILDING NEWS.

SIR,—Your recent comments on the above subject are very much to the point.

No paint, pitch, asphalt, or paper wrappings can possibly protect pipes or iron rods when subject to electric currents. This was recently proved by the American Bureau of Standards in exhaustive tests.

The disintegration of concrete when electricity comes into contact with water not only results in the loss of electric current, but certainly allows more ingress of dampness, and may result in severe structural defects. Indeed, it must appeal to any thoughtful person that when concrete becomes of the consistency of mud, which it does when electrolysis occurs, that concrete ceases to serve its purpose.

The tests made by the American Bureau of Standards also prove that insulating joints are not to be relied upon as the sole means of protection.

My object in writing this letter is to state definitely that the problem is solved economically and definitely by the use of waterproof concrete. The only point to watch is, that the waterproofer will not affect either the tensile or compression strength of the concrete, even after prolonged periods.

It will appeal to all engineers that if concrete can be made waterproof easily and safely that the danger from electrolysis is removed. In some cases it may not be necessary to waterproof the concrete, because a waterproof cement rendering would take its place, and in this way the cost will be even less.

It is not as if waterproofed cement were a new thing, because flat roofs have been waterproofed since 1908 with Pudloed cement; and it is not as if waterproofed cement and concrete had not been tested by the highest authorities, because every Government Department is now using Pudlo in its cement. I mean, by speaking of Government Departments, the Office of Works, War Office, Admiralty, General Post Office, India Office, and Crown Agents for the Colonies. All these Departments are known to be extremely strict in their tests before the general adoption of any material, and especially a new material. This fact alone should remove any fear or prejudice from the minds of engineers towards the use of waterproofed cement and concrete.—I am, etc.,

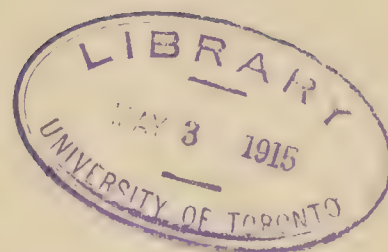
J. H. KERNER GREENWOOD.
King's Lynn.

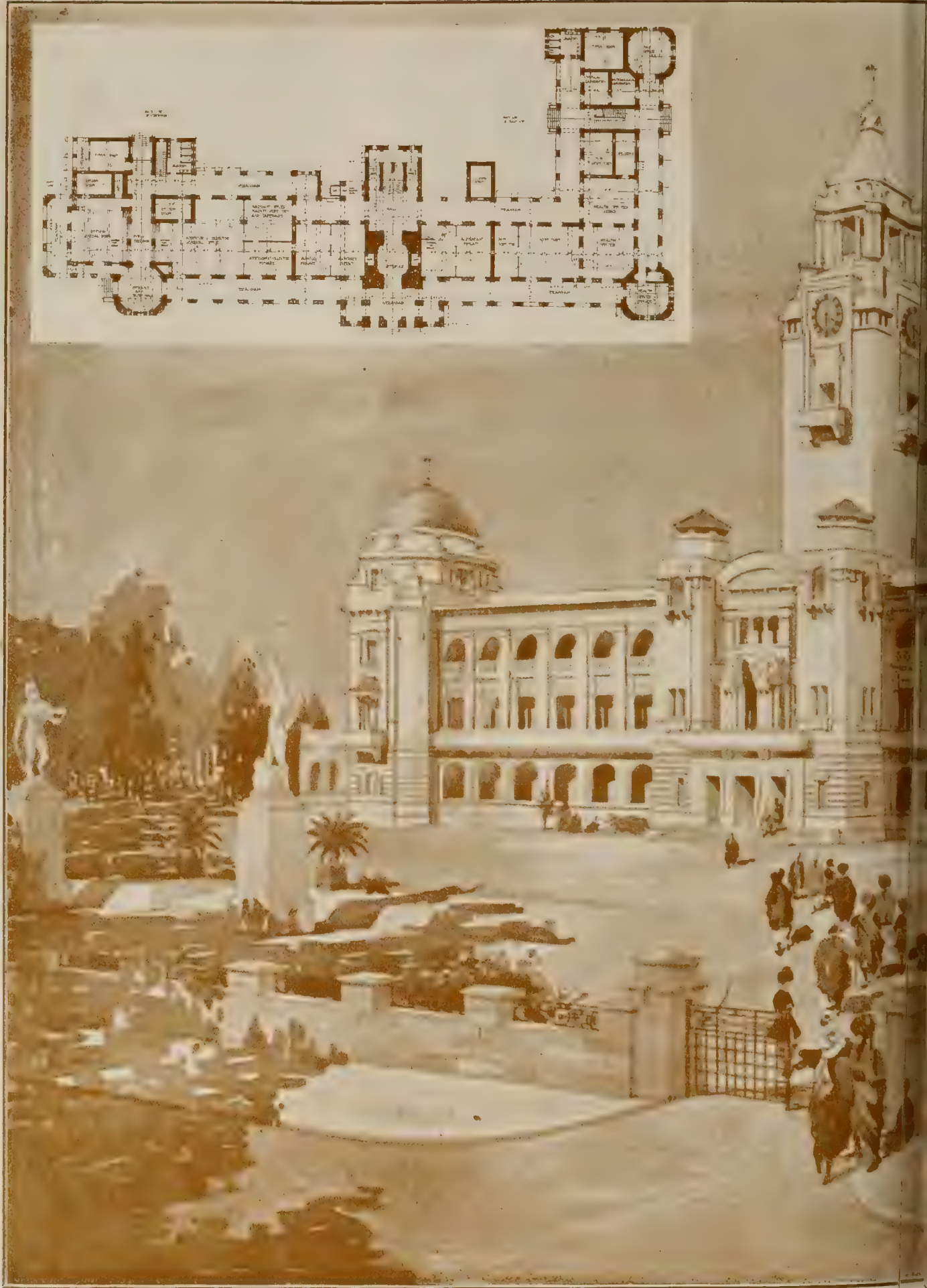
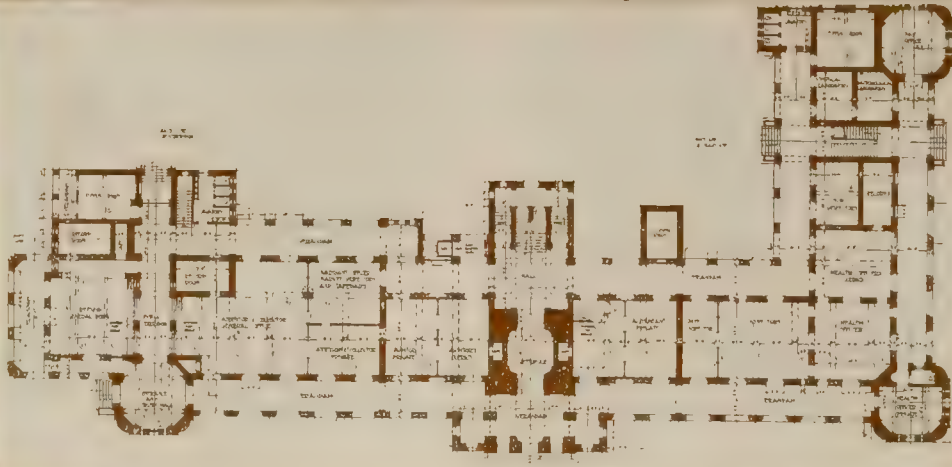
WATER SUPPLY AND SANITARY MATTERS.

LOUGHBOROUGH.—The scheme of the corporation waterworks engineer for a supply of water to the Knightthorpe-road district led to considerable discussion at a meeting of the Loughborough Town Council on Monday night. There was no question, said Mr. Cartwright, the chairman of the water committee, about this scheme being a pressing one, for the reasons of health. Thorpe Acre, which was within the borough, had no system of drainage or a water supply. If an epidemic broke out on that estate, the Local Government Board would immediately issue orders for the corporation to supply Thorpe-lane with water. The proposal was to extend the main from the bridge against the London and North-Western station into Thorpe-lane, and continue it, with a 3in. pipe, through the village, which was not in the borough. He moved that the scheme, at a cost of £1,246 15s. 6d., be proceeded with. The proposal was eventually adopted by a majority.

The Prudential Assurance Company intend to erect new offices at Stockport, on a site in St. Peter's-gate and Duke-street. Mr. Paul Waterhouse, F.R.I.B.A., of Holborn, W.C., is the architect.

The annual report as to the port of Sydney, N.S.W., shows that during the year ended on June 30, 1914, £458,186 was expended on capital account, of which £298,000 represents the outlay on wharves and jetties.





NEW MUNICIPAL BUILDINGS. KARACHI, INDIA, NOW IN CO









THE ENTRANCE FRONT AND FIREPLACE IN THE SALOON, "ISLET" MAIDENHEAD. MR. ERNEST LUNT, F.R.B.A., ARCHT.

Currente Calamo.

This Government has a remarkable faculty for discovering how not to do the right thing when alleged scandals occur, and when it is challenged with regard to its conduct of business. When Mr. Montagu Meyer's appointment as timber buyer was discussed recently in the House of Commons, Lord Emmott, the First Commissioner of Works, extended an invitation to members of Parliament to go to the Office of Works and investigate matters for themselves. Mr. Handel Booth, the Liberal M.P. for Pontefract, took advantage of the offer, and we are inclined to think it possible that the Government and Lord Emmott are by now rather inclined to wish that he hadn't, and to eschew for the future the rather novel method of inquiry by private member! Mr. Handel Booth, at any rate, does not mince matters in what is called his "Special Report":—

I regret (says Mr. Booth) that the promise of facilities made to Parliament has not been kept, and I also point out that your denial of expert help—which I was prepared to pay for—has made my task long and laborious. . . . Further, the Office of Works tried to prevent my attending Mr. Meyer's Office in the City where the books are kept. I have been refused also any information of Mr. Meyer's private dealings in timber whilst buying for the Government, also any details of Mr. Meyer's sales to the War Office, also any opportunity to speak confidentially with any of the four Civil Servants engaged in entering and checking the transactions I was invited to see. After responding in good faith as a member of Parliament to your offer, I resent the steps taken to thwart my efforts.

Mr. Booth protests trenchantly that eight mis-statements were made in the House, which he details. He describes as "without foundation" the statement made by Mr. Harold Baker that "the Office of Works did not resort to methods of a single agent until older and longer contractors had been told that the prices they were attempting to press upon the Government were so great that really it was their duty to see what was the alternative." As to Mr. Beck's statement that Mr. Meyer's business has for the time being been brought to an end, Mr. Booth says:—

His private turn-over is now at the rate of £100,000 per annum if the figures given (in the House of Commons) are reliable. Mr. Meyer, as a smart business man, is utilising the Government information, which now reaches him, to extend his operations. For instance, he is endeavouring for the first time to get railway contracts for the purchase of sleepers.

In reference to Mr. Beck's statement that "the fact, which is testified by our accountants, is that the business at present being done by Mr. Meyer is 90 per cent. Government business," Mr. Booth says: "The accountant repudiates this assertion." He also declares that "the statements in Parliament of a trial order being executed before the contract was finally decided upon are baseless." He expresses amazement at the dogmatic assurances given by the Government of profits to the State, and says the calculations given to the House are grotesque. He continues:—

One cannot overlook the fact that prices have steadily increased since Mr. Meyer's appointment in October, although building has not been active, and the Government practically the only buyer. It is evident that in some measure the rise has been due to speculation. Mr. Meyer is compelled to buy largely from agents, and it is asserted that his advertised appearance in the market as a purchaser for the Government was the direct cause of Germany's declaration of contraband, and the consequent increase in prices.

Mr. Booth declares that the favouritism shown to Mr. Meyer was "unworthy of a public department," and voices his regret that the Office of Works did not avail itself of voluntary offers made by heads of the timber trade. He endorses Mr. Bonar Law's views with regard to other features of this

remarkable transaction, and concludes as follows:—

In my opinion, a salary should have been paid, and the best men in the trade from patriotic motives would have gladly aided the Government buyer. When compared with this method the Meyer contract can only be considered to have been costly to the nation. I earnestly appeal to your Lordship to terminate the contract and to consult the best men in the trade. Failing which—to insist that Mr. Meyer shall cease buying on his own account whilst he is Government buyer. Failing which—to place a Government timber expert in Mr. Meyer's office to protect the public interest; and to stop the competitive buying of the War Office with yourself now going on.

Lord Emmott has replied to Mr. Handel Booth, declaring that the statement of the latter that his efforts have been thwarted by the Office of Works are "baseless," and that others are misleading. In Lord Emmott's judgment "the entrusting of this work to an architect with considerable knowledge of timber was the correct procedure, having regard to the organisation of the department; and the method of a salaried buyer was impossible in the circumstances, especially in view of the fact that what was required was not a mere buying agent, but a complete organisation to handle the whole business of purchase, transport by sea and land, conversion to required sizes, and delivery on the site by the time required." Lord Emmott declares that "the public interest is, in his judgment, sufficiently protected under the arrangements now made, and the multiplication of experts is unnecessary." The matter came again before the House of Commons yesterday after we went to press, and Mr. Handel Booth has intimated his intention, unless he got a satisfactory reply from a substantial Minister, to press it to a division.

Kings and other celebrities will not improbably shrink from the sculptor if their effigies, after gracing historic resting-places like Westminster Hall, are to be cleared out and ultimately sent to the Old Bailey! That, however, seems the destined last home of those which were "lent in perpetuity" to the City of London by the Government in 1913. The offer was accepted with thanks by the Court of Common Council, and the Library Committee was instructed to consider and report where the statues, which are of great weight, should be placed. It was the original intention of the Office of Works that they should be erected in the Guildhall Art Gallery. Their dimensions, however, seem to have proved an obstacle in the way of their finding an asylum there, or elsewhere. Then the Gresham Committee were approached with a view to the selection of the Royal Exchange as a site, but that, too, was not found feasible. Later, the Trustees of the Crystal Palace expressed their willingness to accept the statues on permanent loan—a proposition which received the assent of the Office of Works. Since then the City Lands Committee intimated a desire to have the statues placed in the new Sessions House in the Old Bailey, and the Library Committee will report on the subject at next week's meeting of the Court of Common Council.

"Lawyers' litigation" may seem to some a strange phrase, but it will be quite clear to those who know. We do not mean the many cases in which the fighting attitude of a client is more or less encouraged for professional purposes, as these are not so common as once they were, and often the vicious spite of the client himself, or herself, is most to

blame in the matter. But there is a class of legal business wherein cases are taken upwards on appeal from Court to Court, at the cost of the parties concerned, though, all the time, those advising must, or should, know that there is little, if any, chance of changing the first decision, whatever may be the reliance still placed upon luck and the law's uncertainty. A most remarkable example of this sort of thing lately occurred in a claim under the Workmen's Compensation Act, which, beginning in the County-court, ended in the House of Lords, leaving both sides as they were, with nothing proved and no precedent made except that some hundreds of pounds had been spent upon fighting for the sole benefit of the lawyers engaged. The only question was whether a workman, injured in an accident, who had been medically examined at the time, received compensation for six months, went back to work, had an illness, and then, two and a half years later, claimed on the old injury, was bound to submit to examination again. The County-court judge said he must; and in view of the malingering known to be about, and the facts, this seems only fair. The Court of Appeal had no doubt of it, and now the House of Lords confirmed the County-court. These cases are fought out of the funds of insurance companies on one side and trade unions on the other. But one wonders why those members of these concerns who really pay do not sometimes inquire into the great waste of their money brought about by this sort of lawyers' litigation?

We commend the action of Dean of Guild Irvine, of Dunfermline, to the consideration of all affected by the growing disposition of town-planning committees to interfere in matters quite outside their province, generally with the result that building operations are quite unnecessarily and prejudicially delayed. Plans were presented on Tuesday week at Dunfermline Dean of Guild Court for the erection at East-road of a garage and offices for the Autocar Bus Company. It having been suggested by Mr. John L. Jack, town clerk, that the plans, which were in respect of buildings to be erected within the town-planning area, should be remitted to the town-planning committee of the town council, in accordance with custom, Dean of Guild Irvine said he was very much averse from doing anything of the kind. They had, he said, been put about for two or three years in connection with the town-planning scheme, and they now seemed to be further away than ever they were from the completion of the scheme. Plans could not be thrown aside time after time because of the non-completion of the scheme. The plans before the Court should, in his opinion, be passed forthwith. Asked by the town clerk if his position was that whatever the town-planning scheme might be worth, he recognised no obligation to the town-planning committee, the Dean of Guild replied that of course it would alter matters if the scheme were resuscitated. The town clerk remarked that the town-planning scheme was not dead yet. The Dean of Guild said that might be so; but it was the case that the town-planning scheme had kept back the erection of between one hundred and two hundred tenement houses, of which there was a great scarcity in Dunfermline. People would not come forward with plans to be continually told that the buildings might not be in accordance with the town-

planning scheme, and that they would be erected at the owners' risk. After further discussion the Court granted warrant as craved.

From Atherstone, as from scores and scores of other places, comes the same discreditable complaint. "No houses to be had!" In his annual report to the district council last week Dr. Herring, the medical officer of health, observed, this year, he was sorry to say, there was little to report with regard to the housing of the working classes. The activity and enthusiasm of 1912 had disappeared, and although the council had secured a plot of five acres of land on which to erect workmen's dwellings, there was at present no prospect of any houses being forthcoming in the near future. The need for additional housing accommodation was as urgent as ever, private enterprise having failed to meet the demand. Plans were in preparation for a number of cottages of a somewhat similar type to those erected two or three years ago; but this work, like all other public undertakings involving the borrowing of money, would probably be postponed until the country was more settled and the money market easier. Closing orders were made in respect of fifteen old houses during the past year. Seeing that any new dwellings would not be available for some time, it would be necessary for the authorities to be more vigilant as to the maintenance and cleanliness of the existing houses. The law, he thought, was certainly too lenient on this point. A defaulting landlord was liable to various penalties for allowing his premises to become dilapidated or unwholesome, but the tenant who was content to dwell in dirty surroundings, very often of his own creating, could not be so easily dealt with, unless there should happen to be infectious disease in the house. With that opinion most fair-minded men will agree. The "scabby sheep who infects the flock, and poisons all the rest," should certainly be drastically dealt with.

We have received from the Canadian Government Offices, 17, Victoria-street, S.W., two interesting volumes, one dealing with gypsum in Canada, and the other with the Dominion's building and ornamental stones, both issued by the Department of Mines. The second, which is the third instalment of its series, is devoted to the stones and slates of the Province of Quebec, and is by Mr. Wm. A. Parks, B.A., Ph.D. Few readers, probably, have any idea of the wealth of the province in stones. It produces limestone of good structural quality in large amount, it is rich in deposits of granite of various kinds, its production of high-grade marbles is rapidly increasing, and it owns the only important slate quarries in the Dominion. Excellent illustrations of many of the stones are given, their various locations described, and the fullest details with respect to their strength and quality set out. The first-mentioned volume, which is by Mr. L. H. Cole, embraces the gypsum industry, one of the most important in Canada. It deals with the properties of the material, the theory of its origin, gives full descriptions of its different occurrences in the Dominion, and discusses the technology and uses of the mineral. At present most of the gypsum is shipped in a crude state to the United States, where it is calcined, and in great part re-shipped to Canada as a finished product. There is evidently a future of almost limit-

less expansion in the industry, and there is little doubt that its growth in the near future will be enormous, as it is only recently that any endeavour has been made to acquaint the Canadian public with the advantages of hard wall-plasters.

STATUES, MEMORIALS, &c.

STANNINGTON.—A memorial to the late Viscount Ridley (1842-1904—Home Secretary 1893-1900) in Stannington Parish Church was unveiled and dedicated on Sunday. The monument, which is the gift of the present Lord Ridley to the church, was designed and executed by Mr. W. Reynolds-Stephens, R.B.S., and consists of a recumbent effigy upon a tomb-like pedestal, cruciform on plan. The effigy, which is in copper-bronze, shows the late Lord Ridley in his peer's robes, with the three bands of ermine and gold lace of a viscount upon its right side. The coat worn is that of a Secretary of State. The feet rest against a cushion which is embroidered with the family shield of arms. In the caps of the supporting columns the family crest—the bull—instead of one of the existing architectural caps, is employed. The cross-shaped, tomb-like pedestal consists of various marbles—black, dove, and green. Behind the tomb, and forming part of the memorial, is a marble-and-metal organ-screen. The Ridley coat-of-arms forms an enrichment in the centre of the marble wall, whilst on each side of the organ-pipes is a youthful angel.

Mr. W. J. Burgess, of Combemartin, has been appointed highway surveyor to the Launceston Rural District Council in succession to the late Mr. R. Olver.

Mr. Farquharson Minto, who for forty years has been road surveyor for the Arbroath district of the Forfarshire County Council, has just died at Arbroath.

The corporation of Heywood, Lancs, have received the sanction of the Local Government Board to the borrowing of £6,440 for the extension of their electricity undertaking.

Mr. C. J. A. Beynon, surveyor to the rural district council of Cheltenham, has been appointed surveyor of the district roads by the Abingdon Rural District Council at a salary of £130 per annum, rising to £150.

As one of the results of the changes in staff which came into operation on the Great Eastern Railway system on Monday, Mr. H. Wilmer, formerly designated as "engineer," is now to be known as "chief civil engineer."

At Clacton-on-Sea, on Tuesday, Mr. P. M. Crosthwaite, an inspector under the Local Government Board, held an inquiry as to an application from the urban district council for sanction to borrow £10,450 for works of sea-defence and electricity.

The Wandsworth Borough Council have provided Balham with a public swimming-bath at a cost of over £12,000. An informal opening took place on Saturday afternoon. The swimming-pond measures 100ft. by 30ft.; it has a maximum depth of 7ft. The architects were Messrs. Cooke and Twist, of Birmingham, whose design was selected in competition.

Mr. E. T. Hannam, of Lancaster, assistant engineer of the Lancaster and Carlisle section of the London and North-Western Railway, a well-known local cricketer and golfer, who was shot through the groin on March 23 while serving with the 5th King's Own Territorial Force at the front, is making good progress in a hospital at Manchester.

The Secretary of State for Foreign Affairs has been informed by his Majesty's Minister at Stockholm that, according to an official announcement published in that capital on March 23, wood cargoes from Sweden will in future be granted war-risk insurance, whatever their destination. This arrangement affects all wood goods which were not considered contraband by Germany prior to the issue of the German order of November 23 last.

The twenty-eighth annual Chicago Architectural Exhibition was opened in the Galleries of the Art Institute of Chicago on Thursday last, the 8th inst., and is being participated in by the Chicago Architectural Club, the Illinois Society of Architects, the Illinois Chapter of the American Institute of Architects, and the Art Institute of Chicago. Preceding exhibitions have been given solely by the Chicago Architectural Club. The exhibition, which closes on the 28th inst., is illustrative of architecture and the allied arts.

LEGAL INTELLIGENCE.

ARCHITECT v. LICENSED VICTUALLER.—An architect's claim against a licensed victualler for professional services in the preparation of plans for houses was heard by Judge Allen at the Mansfield County-court on Monday. The plaintiff—Ernest Wm. Bostock, architect, of Huthwaite, who appeared in uniform, and was represented by Mr. E. Williams, made a claim of £27 14s. 7d. from Geo. Robert Bailey, formerly landlord of the Portland Arms, Huthwaite, and now of the Masons' Arms, Sutton. The claim was made up as follows: October, 1911, preparation of plans for building three pairs of houses at Beech-avenue, Huthwaite, £3, building not proceeded with; February, 1912, part fee for surveying land opposite the Portland Arms, a guinea; preparation of key plan, 5s. 6d.; June 26, preparation of plans for villas in Station-road, Huthwaite, £1 10s. In 1912 defendant desired to find a site for erecting a picture-house, and plaintiff went with him to Mansfield Woodhouse and Mansfield. He prepared an estimate for such a place amounting to £1,200; but defendant eventually fixed upon a site at Huthwaite. Plaintiff got out plans and specifications; but as the building was not erected, he charged 2½ per cent., the amount of the account being £19 17s. 6d. Defendant changed his mind about the picture-house, and built a club on the site. Plaintiff then prepared drawings of some houses proposed to be erected on the land at the rear of the club, and for this he charged £2. When he sent in his claim he received a counterclaim from defendant for £36 19s. 7d.; but he had never received an account, and was not aware that he was indebted to the defendant.—Mr. R. A. Young (for the defendant): It appears that he was speculative and you were enterprising? Yes.—Did you sometimes, in your anxiety to be enterprising, propound schemes and prepare drawings for speculative projects without his instructions? No.—Do you suggest that Mr. Bailey should, for the sheer delight of paying you for plans, instruct you to prepare plans when he was not going to build? It is not my business, if a client asks for plans to be prepared, to ask him if he is going to build.—With regard to the counterclaim, plaintiff denied defendant's charges for motoring him to a number of places in the district. The only time he went in the motor was at defendant's invitation. He also denied that there were accounts against him for wines, spirits, stout, gin, and beer. What he had had he paid for. As for £4 for hire of a marquee, Bailey, who was once vice-president of the tennis club, lent the tent occasionally to the club. That was the only time plaintiff had anything to do with the marquee. Bailey, in evidence, denied that he had ever given the plaintiff instructions to prepare any plans. Plaintiff knew he had some land, and he used to come to him with plans and say, "These houses would look nice on the site." In fact, plaintiff was always on his doorstep with plans: it was his enterprise. He never contemplated building a picture-palace, as he had not the money to do it with, and did not instruct the plaintiff to draw plans or prepare estimates. Plaintiff was anxious to draw up plans for his brother to build from. As for the account he had rendered, he had sent him details and had applied personally for payment. He took Bostock on many business motor trips, and in July and August, 1913, he supplied him with wines and spirits. Plaintiff had the tent for his personal use, and he sold some fencing to him for £3 10s.—After a long hearing, his Honour dismissed both claims.

At Blackburn, on Tuesday, Mr. Edward Leonard held an inquiry on behalf of the Local Government Board as to an application from the corporation for sanction to borrow £9,000 for the erection of public halls.

The London County Council is proposing to arrange for a conference of road authorities with a view to definite action being taken to mitigate the nuisance caused by the vibration of heavy motor-cars and road locomotives.

Dr. Michael H. Taylor, the Kingston coroner, concluded at Surbiton on Friday evening an inquest concerning the death of Frederick Gale, builder, of Fleece-road, Long Ditton, who was killed whilst cycling at Old Malden on March 4. According to the evidence given, a motor-car driven by Harry James Swindley, of Putney, ran down Gale, who was left dying in the road-way. Mr. Comyns Carr, who attended the inquest on behalf of Swindley, said that since the accident the last-named had been certified to be insane, and was now confined in a private lunatic asylum at Tooting Bec. The jury returned a verdict of "manslaughter" against Swindley.

Our Office Table.

The three vacant Associateships in the Royal Academy, caused by the promotion to full membership of Messrs. Reginald Blomfield, Henry Scott Tuke, and G. A. Storey, will be filled at a meeting to be held on Friday in next week, the 23rd inst. Hitherto absentees have been unable to vote, even in the initial "scratching," but in future a duly certified list of candidates is to be sent a fortnight before the election to all Academicians and Associates, with instructions to place a mark against the names of the three considered most worthy of election, or, if there be more than one vacancy, against the names of six. This list, so marked, must be signed and returned before a specified date—in the present case by Monday next. Election will be completed, in the blackboard and final ballot stages, as in the past. In future, elections of Associates will only take place on one of the Members' Varnishing Days, which immediately precede the opening of the summer exhibition. A good attendance at elections will thus be insured. Among those nominated for the election next week are three Fellows of the Royal Institute of British Architects—Mr. Walter Cave, Mr. E. Guy Dawber, and Sir Robert Lorimer—and widespread interest will be felt in the result.

It is officially announced that during the months of January, February, and March the Road Board indicated additional advances to highway authorities amounting in the aggregate to £80,143, of which £71,449 was by way of grant, and £8,964 by way of loan. The advances made and indicated up till March 31, 1915, less indications cancelled, amount to £6,034,447. Of this total, £4,580,034 is by way of grant, and £1,454,413 by way of loan. The formal grants completed with the approval of the Treasury during the last quarter, amounting to £190,852, were applied as follows:—Road-crust improvements, £132,365; road-widening and improvement of curves and corners, £30,720; road diversions, £2,412; reconstruction and improvement of bridges, £1,450; and new road and bridges, £23,907.

The sixth report of the Royal Commission on Ancient Monuments in Scotland, embracing the revised edition of the Berwickshire inventory, which is now being finally adjusted, will be presented before the close of the year. The printing of the Dumfriesshire inventory will now be proceeded with, and it is expected that the volume for that county will be ready for issue in 1915. During the summer of 1914 the survey of the archaeological remains in the Hebrides was taken up and a great part of the survey of this part of the country was overtaken. This survey will be resumed and continued during the summer of 1915. In consequence of the unfortunate illness of the principal architect, the work of the architectural section of the survey was somewhat retarded this year, but the survey of the architectural remains in East Lothian was completed, the survey of Midlothian begun, and a good deal of work overtaken in Berwickshire in connection with the new and illustrated edition of the inventory for that county. During the summer to come the architectural survey of Midlothian will be continued, and probably completed.

A new edition of the British Standard Specification for Portland Cement, issued by the Engineering Standards Committee, just published, contains some important modifications. Increased fineness of grinding of cement has been legislated for, and the minimum tensile strength at seven days of both neat cement and cement and sand has been raised. The clauses dealing with the preparation of the briquettes have been amplified, the procedure being described in greater detail than has previously been the case. In the case of both neat cement briquettes and cement and sand briquettes, ramming or hammering is expressly prohibited. The growth of tensile strength at twenty-eight days, both for neat cement and

cement and sand, is now given in the form of a formula, in place of the fixed percentages which have been specified hitherto. While not making any material alterations in the figures previously laid down for the growth of the tensile strength at twenty-eight days over that at seven days, the formula gives a progressive increase instead of the somewhat irregular steps of the method previously adopted, and for use in the test-house, lends itself to the construction of a curve from which the breaking strength at twenty-eight days, corresponding to any ascertained breaking strength at seven days can readily be read off. With the view of making easier the determination of what constitutes a visible impression in the test for final setting time, the Vicat needle for this test is provided with a fixed metal circular cutting edge set half a millimetre back from the point, as this length is sufficient to clear the scum which sometimes forms on the surface of the pat. The cement is considered to be finally set when the needle makes an impression on the pat and the attachment fails to do so. The attachment is illustrated on the plate showing the Vicat needle. All the plates have been entirely redrawn, and two new plates have been added to the specification, one dealing with a standard spatula for use in making up the cement and sand briquettes, and the other showing an improved form of specific-gravity bottle, which the committee have approved as suitable for use, though they do not stipulate for its employment to the exclusion of any other pattern. Instructions for obtaining the specific gravity of cement are given on the plate.

The Scarborough Corporation have adopted a comprehensive scheme of town planning and housing. The areas affected are in the Central and the East Wards, the oldest and most congested districts in the old town, and the scheme embraces the construction of a new thoroughfare from the Newborough-street end of North-street (near the site of the Old Bar) to a point on the Sandside near the entrance to the Marine-drive and Promenade, the length of the new street to be, approximately, one mile. The scheme will be carried out in sections, the work thus being spread over a number of years.

In the Civil Service Estimates reference is made to the Royal Commission on Housing in Scotland, which was appointed by Royal warrant, dated October 30, 1912, to inquire into the housing of the industrial population of Scotland, rural and urban (with special reference in the rural districts to the housing of miners and agricultural labourers), and to report what legislative or administrative action is, in their opinion, desirable to remedy existing defects. It commenced work in February, 1913, but owing to the interruption of its work by the war, it is impossible to estimate when it will present its report. Altogether, 111 formal sittings of the Commission have been held, and 413 witnesses examined. These sittings have been held in Edinburgh, Glasgow, Dundee, and other parts of Scotland. The Commissioners have made visits of inspection to various parts of Scotland, including the large industrial and mining centres, and also representative agricultural districts, and the Highlands and Islands. In addition the Commissioners have visited various centres in England, and investigated housing and town-planning schemes there.

A useful textbook (Vol. I., Introductory) of "Electrical Engineering," by T. C. Baillie, M.A., D.Sc., A.M.I.E.E. (Cambridge University Press, Fetter-lane, E.C. 5s.), will be appreciated by elementary students in technical institutions. In view of the increasing use which is being made of potentiometer methods, a somewhat fuller treatment of the potentiometer is given than is usual, the author having found its use at an early stage a valuable means of correcting the tendency of students to be content with rough experimental results.

"Every Woman's Flower Garden: How to Make and Keep it Beautiful" (Herbert

Jenkins, 12, Arundel-place, Haymarket, S.W.; price, 5s. net) is by Miss Mary Hampden, who has been for many years writing and answering questions in the ladies' and the gardening papers, and so has earned a wide practical experience as to what women who go in for gardening want and need to know. These queries from all quarters give the best training upon any subject of which we are aware. Here we have what is emphatically a good, sound piece of work, which begins at the beginning and teaches both men and women how they should set about starting a garden of their own and how they should keep it up so as to make it a thing of growth and beauty and delight. There are numerous plans and designs which can be adopted, or adapted, and the work is really enlightened by its five plates in colour. We can commend the book as the outcome of knowledge and taste, and as well worth the money.

"The Heating and Ventilation of Buildings," by Rolla C. Carpenter, C.E. (London: Chapman and Hall, Ltd., 11, Henrietta-street, W.C., 15s.), is a sixth edition of an American book of which we have before spoken well deservedly. The principal portion of the practical part of the volume is devoted to construction of gravity-heating systems, using steam and hot water; but systems of heating with hot air, with or without blower, with exhaust steam, and with electricity, are considered, and practical directions for construction are given. British architects and builders will find a good deal of information of service to them, and with which some, at any rate, are unfamiliar.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Town Planning Institute. "Re-planning and Redevelopment in Existing Centres," by W. T. Lancashire, M.I.C.E., and H. V. Lancaster, F.R.I.B.A., 92, Victoria-street, S.W. 8 p.m.

SATURDAY (To-morrow).—St. Paul's Ecclesiological Society. Visit to St. Bartholomew the Great, Smithfield, conducted by E. A. Webb, F.S.A. 2.30 p.m.

MONDAY.—Royal Institute of British Architects. "The Design and Construction of Buildings for Industrial Purposes," by Segar Owen, F.R.I.B.A. 8 p.m.

WEDNESDAY.—Royal Society of Arts. "The State and the Fisherman," by Moreton Frewan. 8 p.m.

THURSDAY.—Roads Improvement Association. Annual Meeting at Institution of Civil Engineers, Great George-street, S.W. 4 p.m.

SATURDAY (APRIL 24).—Institution of Municipal Engineers. Visit of the Southern and South-Eastern Districts to the New London County Hall, Belvedere-road S.E.

At a special meeting of the Madeley District Council on Friday, Mr. A. O. Callear was appointed surveyor and water engineer for the Madeley district at a salary of £180 a year.

The corporation of Southampton at their meeting on Wednesday appointed Mr. W. T. Robson, manager of the South Shields tramways, to the managership of the Southampton system, at a salary of £400 a year.

At the last meeting of the Somerset County Council the Mental Deficiency Act committee reported that the board of guardians of Long Ashton had offered to sell to the county council, at a cost of £3,000, the school at their work-house and five acres of land for providing accommodation for mental defectives. The committee was authorised to engage Mr. Hine, architect, London, to prepare detailed plans and estimates of the necessary alterations and additions to the buildings.

The new buildings at the Worcester Garden Suburb were declared open on Friday by Earl Grey. The extension comprises fourteen bungalows, at rents varying from 3s. 9d. to 5s. 6d. per week. They form three sides of the Earl Grey Square. Several pairs of houses and eight bungalows were erected under the scheme of the Worcester Tenants, Ltd. The demand for the bungalow type of dwelling caused the committee to consider the advisability of further building. Plans were prepared before the outbreak of war, and it was decided to proceed with the work, which has been carried out at a cost of £2,000. The architect is Mr. Rowe, of Worcester.

The death is announced from Brighton of Mr. William Basil Stefani, architect and surveyor, of Finsbury Circus, who had practised in the City for the last forty years. For some time Mr. Stefani was assistant surveyor to the Drapers' Company and surveyor to the parish of Allhallows, Lombard-street. He was a request as a witness in "light-and-air" cases. He had been a Licentiate of the R.I.B.A. since 1911.

	in.	in.	£	s.	d.	per 1,000 of
Blue Portmadoc .. 20	x 10	12	13	6	1,200 at £ stn.	
" " " " " "	" 10	6	12	6		" "
Blue Bangor..... 20	10	13	7	6		" "
" " " " " "	20	12	13	17	6	" "
First quality 20	10	13	0	0		" "
" " " " " "	20	12	13	15	0	" "
" " " " " "	16	8	7	5	0	" "
Eureka unfading green	20	10	15	17	6	" "
" " " " " "	20	13	18	7	6	" "
" " " " " "	18	10	13	5	0	" "
" " " " " "	16	8	10	5	0	" "
Permanent Green .. 20	10	11	13	6		" "
" " " " " "	18	10	9	13	6	" "
" " " " " "	16	8	6	13	6	" "

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

The Panama-Pacific International Exposition, San Francisco, California. The Palaces of Various Industries, Machinery, and Education; also the Court of Palms. Messrs. Bliss and Faville, Mr. George W. Kelham, and Messrs. Ward and Blohme, Architects.

Messrs. Gossage and Sons', Ltd., New Offices, Widnes, Lancashire. General Office and Directors' Room. Two interiors and a general plan. Messrs. Charles W. Harris and Laurence Hobson, A.A.R.I.B.A., Architects.
Liverpool Housing Scheme, Rathbone-street Area. Selected Design: View and Plans of Tenements, with block plan. Messrs. Biram and Fletcher, Architects.
New Premises, Regent-street, W., from Margaret-street to Great Castle-street. Mr. C. T. Armstrong, A.A.R.I.B.A., Architect.
National Competition Prize Medal. Figure-work, by Messrs. Frank D. Wray and George E. Bradbury, Miss Edith S. Bessell, and Miss Frances K. Matthew.

THE PANAMA - PACIFIC INTERNATIONAL EXPOSITION, SAN FRANCISCO, CALIFORNIA.

By Mr. WILLIAM B. FAVILLE (Messrs. Bliss and Faville, Architects to the Exposition).

[WITH ILLUSTRATIONS.]

The Panama-Pacific International Exposition of San Francisco, California, has been built to commemorate the construction of the canal across the Isthmus of Panama, which joins North and South America. The canal (acknowledged to be one of the greatest engineering achievements of modern times) inspired the city of San Francisco and the State of California to erect a suitable setting for the Exposition and to create an architectural expression worthy of commemorating this important event. Built without Government assistance by a city only lately risen from the ashes of her great devastation of the year 1906, it stands as an expression of the venturesome spirit and untiring energy of which she is possessed. It is hoped that the Exposition will exert a powerful educational influence upon the people of America through the architectural expression given to the main group of buildings. The aim has been to create a composition of sufficient merit to warrant study and criticism with the intention that its influence upon art and architectural development may be great, and awake interest architecturally.

The Exposition lies in an amphitheatre formed in the hollow of the hills in the northern portion of the city, having the sparkling bay of San Francisco at its feet, while to the south the houses of the city rise tier upon tier, and to the west the forests of the Presidio come down to meet the site. Six hundred and thirty-five acres are within the enclosure of the Exposition, with sub-divisions as follows:—The main group of twelve exhibit palaces, with their gardens and courts; the foreign nations and States of America; the live stock department, with its stadium and race track, and the amusement concessions. The arrangement of the main group of palaces is closely co-related, more so than in other previous Expositions, and one can pass direct from building to building. Eight of the twelve main palaces are bound together by the great wall of the Exposition, which in reality forms the outer walls of these buildings. It is 65ft. in height, and is designed in sympathy with the early mission walls of California. The composition might be referred to as one vast building sub-divided into eight palaces, comprising the following:—Varied Industries, Manufactures, Liberal Arts, Educa-

tion, Food Products, Agriculture, Transportation, and Mines.

The arrangement of the plan suggests an Oriental bazaar or walled city, so closely related that the intervening divisions become courts connected by streets or avenues of circulation, and these courts have become the pivotal points where the architects, sculptors, and painters have endeavoured to fulfil and bring to reality their dreams of the possible. This arrangement also forms three important courts; that in the centre is the Court of the Universe, and has been designed by Messrs. McKim, Mead, and White; to the left of the central court is the Court of Seasons, designed by Mr. Henry Bacon; and to the right of the central court is the Court of Abundance, designed by Mr. L. C. Mullgardt; while in the south, facing the entrance, are the two elongated semicircle courts designed by Mr. George Kelham. Flanking the main group of eight buildings on the left is the Fine Arts Palace, designed by Mr. Bernard R. Maybecq, and on the right, enclosing the composition on that side is the Machinery Palace, designed by Messrs. Ward and Blohme. Flanking the approach to the Exposition on the left and at the end of the South Garden is the Horticulture Palace, designed by Messrs. Bakewell and Brown, and on the right, flanking the garden, is the Festival Hall, designed by Mr. Robert D. Farquhar. Dominating the whole composition is the Tower of Jewels, forming the gateway to the Walled City, being 430ft. high and designed by Messrs. Carrere and Hastings.

In the apportioning of the work of the exposition to the several architects, the treatment of the great wall was assigned to the writer, he having suggested the idea, and to the firm of Messrs. Bliss and Faville was entrusted the development of the eight buildings enclosed within its boundaries, including the interiors, outer walls, domes, and walls forming the passage-ways connecting the various courts. Mr. Carl Bitter was chosen as Chief of the Department of Sculpture, with Mr. Stirling Calder as acting head. Mr. Jules Guerin was appointed Chief of the Colour Department. Mr. John McLaren was selected as Chief of Landscape and Gardening. Mr. W. D. A. Ryan, Chief of Illumination, and Mr. Paul Deniville, Chief of Architectural Modelling and Wall Texture.

These gentlemen were selected for the heads of their departments when the plan of the Exposition was still undeveloped and assembled with the architects at their second conference. It is to their hearty co-operation that this unity of the Arts has proved so successful. An endeavour was made to restrain the amount of Sculpture used and confine it to architectural enrich-

ment. This has resulted in a decided advance in Art quality over that of previous Expositions in America. An abundant use of colour has been employed, and its influence is apparent everywhere. The mass of colour employed is extremely good, and I think could not be better: as the green used on the eight domes, the yellowy-red on the roofs, the red behind the colonnades, the blue of the vaults of the colonnades, and rose used in the Pink Court, etc.

The colour applied on the travertine texture is enhanced by the texture of the wall. The interstices are left in the warm, creamy tan of the original travertine, while the colour is applied only to the flat surfaces. The bottom of the pools of water and fountains are coloured. There are miles of flags, acres of flowers all of which have been arranged to harmonise. The use of colour on detail is not so successful. To this background of colour has been added the mural paintings by Messrs. Wm. de Leftwich Dodge, Frank Dumond, Childe Hassam, Charles Halloway, Robert Reid, Frank Brangwyn, A.R.A., and Edward Simmons. While these decorations add finish to the composition, they give the impression that a happier placing could have been chosen for many of them, except those by Mr. Brangwyn, which are beautifully placed, and eminently effective.

A new method of illumination has been used, which makes the buildings most interesting at night. The walls are flooded with light from behind concealed or screened sources, and the grounds are free from any direct glare of light unpleasant to the eye. The buildings glow in a reflected light, and the Tower of Jewels is thrown into prominence by powerful lights, with over 100,000 points of light twinkling like stars.

It has been possible in the fine climate of San Francisco to luxuriate in planting, and trees up to the height of 40ft. have been brought by the train-load, and thus a charm of age has been possible. A living hedge has also been created encircling the Exposition. It is 25ft. in height, made upon a skeleton framework by piling one above the other boxes of Mesembryanthemum vines. This hedge not only adds dignity to the approach, but acts as a screen to the city from within the grounds.

The City of Francisco is proud of this achievement, the nation is happy at the excellence of the results, and when the world shall have passed within the gates it is hoped that she will realise that the Exposition as created is an expression of our civilisation, that it reflects the tastes of our people, their earnestness, and their ideals, for it is abundant with our pulse of living and form of thought.

INDIVIDUALITY.*

In many respects this book is a suggestive one. With its general application it is hardly our province to deal, and we incline to question the opening proposition, which must be accepted ere the reader can fully benefit by the encouragement Mr. Voysey offers his fellow-men. "Let us assume," he says, "that there is a beneficent and omnipotent controlling power, that is perfectly good and perfectly loving; and that our existence here is for the purpose of growing individual characters." Intellectual culture and the scientific mind will help us little, says Mr. Voysey, to develop individuality; it is only by appealing to the "moral sentiments" that we can justly estimate any man's worth. The great foe of individualism is "Collectivism," of which "conformity is the very essence, as one can still see in the influence of Rome on our conduct in every-day affairs." There are large bodies of men banded together, it seems, not for the improvement of character or the encouragement of individuality, but for the coercion of the multitude into preconceived modes and manners. It is "inconceivable," but nevertheless true, that "many of our leading architects at the present time should be reviving these samples of ancient sin, and at the same time believe them to be evil." The "sample of ancient sin" Mr. Voysey especially reprobates is the English Renaissance style.

A cry is now raised for a certain style of architecture, which happens to be at the moment what is called "the English Renaissance," a style which was first introduced into this country at one of the most morally corrupt periods of the nation's history. The wealthy had travelled and seen the beauties of foreign countries, and impressions received by them in their moral darkness were all of a materialistic nature. While appreciating the modes of foreign work, they were forgetful of the conditions of climate and national character, and expressions of emotion were not what they looked for, and love of truth was neglected. There were cultured architects of exquisite taste, like Sir Christopher Wren, who showed his fine sense of proportion in the foreign tongue. He, no doubt, was quite unconscious that the accentuation of jointing of stonework, known as rustication, was originally a deliberate attempt to deceive, it being adopted to make walls look more solid than they really were—a direct and immoral effort on the part of the crinators, who were quite prolific in that form of falsehood, and, possibly like their imitators of to-day, were quite unconscious they were doing anything wrong.

The Tudor times and style find favour with Mr. Voysey. "Moral sentiments were then as fashionable as motor-cars are now":—

When Pugin designed the Houses of Parliament, to meet the conditions of plan dictated by Sir Charles Barry, he used his memory, which was well stored with the best examples of Tudor architecture. No living architect of his time could compare with him for intimate knowledge of that style. You may search the Houses of Parliament from top to bottom, and you will not find one superficial yard that is copied from any pre-existing building. He adopted the forms most suited to the materials and requirements, and was governed by no pre-existing examples, but faithfully met, to the best of his knowledge and ability, all those requirements and conditions which were presented to his mind, classifying them and anointing them with his devout spirit, allowing his moral sentiments to play like dancing light on every detail. Augustus Welby Pugin was indeed a truly devout individualist—and none the less a Catholic, a fact which debarred him from entering into the competition for the Houses of Parliament, which the Government of that day decided must be built in the Gothic manner. And so it was that Sir Charles Barry, knowing nothing about Gothic, and caring less, employed Pugin for the work. In this way the Government imposed the Gothic principle, but not any particular Gothic style. We have travelled some way on the road of tolerance since those days.

and have widened the possibilities of individual development; but, in spite of all advance, are we not much more collectivist and tyrannical? Much more materialistic than spiritual? This example we have cited would seem somewhat to refute our arguments against the imposition of any style. On examination, however, it will be seen that the mode adopted by Pugin was one born and bred in England alone, thoroughly germane to the climate, and national in character, and not so very far removed in time from Pugin's own period. Hence the conditions of material and labour fitted exactly the mode of his design. He cannot be said to have been dominated by the style he ultimately displayed, for it was a natural growth out of novel conditions. In contrast to this, we have only to look at St. Paul's Cathedral to see the effect of a foreign example dominating and violating all conditions of climate, national character and material, the form being so unsuited to the material that added strength had to be given to the stones by hidden ironwork.

We are not sure that the last slap at Wren in the preceding paragraph is quite deserved, but a "revolution" we are told is coming. We have only to search diligently for indications of "moral sentiment" in all material things, and then

Love of truth would lead us to a more candid avowal of practical construction and check us from disguising it, or the materials of which it is made. Sham arches and columns that carry nothing but disgrace would be drummed out of existence. Stone shells would no longer hide the iron embryo of architecture. Broken pediments and symmetrical façades would cease to satisfy us. Architecture learnt on the drawing-board and measured off by the yard would be delegated to the world of Academics and collectivism. We should grow to love the natural qualities of materials. Oak, because it is a native tree, would be used in its natural colour; no attempt would be made to make it appear old or like other woods. Wallpapers and floorcloth would not be made to imitate tiles or marble. Nothing fashioned to look better than is would be tolerated. Hidden parts of houses would not be made shabby in order to lavish more on the exposed places. The pursuit of truth will drive us to preserve our credit and not have one quality for the back and another for the front, as it was once expressed, "Queen Anne in front and Mary Anne behind."

That this may speedily come to pass we heartily pray; and that Mr. Voysey's denunciations of present-day architects and "the English Renaissance style" may bring it about, but we are by no means sure of it.

PHILIP WEBB, ARCHITECT.

The name of Philip Webb, who died last Saturday, will always be associated with the best workers for art of the Victorian period. Like his contemporary Mr. Norman Shaw, he was born in 1831; William Morris was three years his junior; E. Welby Pugin was born also in 1834; Mr. Eden Nesfield, Shaw's early partner, was born in 1835, when E. W. Godwin also was born. Philip Webb was the son of a solicitor at Oxford, and his father, who died in 1848, artied him to an architect in Reading, at the age of 15, in 1846. Leaving his master at the end of four or five years, Webb entered the office of George Edmund Street, then in practice at Oxford, and he remained as Street's chief assistant till 1858. It was on the 21st of January, 1856, that Morris signed articles with Street, and began work in the office of the latter in Beaumont-street, Oxford. It was in a house opposite St. John's College that Webb, Street's senior clerk, lived, then a few years older than Morris. Between the two arose a close and life-long friendship. When Webb left Street's office in 1858, his place was taken by Norman Shaw. In August, 1857, Webb, Morris, and Faulkner took a trip together in Northern France, rowing down the Seine from Paris, a voyage of some adventure, for an Oxford boat had been sent over from Bossm's to Paris, where it arrived with a hole in its bottom, and the start from Quai du Louvre, amid the satire of the Parisians as the three Englishmen embarked with three carpet bags and half a dozen bottles of wine for their luggage was considerable. During the trip there Morris and

Webb discussed the building of a new house for the former, and on their return there was much travelling about in search of a site. In 1859, after his marriage, Morris broke up his Red Lion-square establishment, and went to live with his wife at 41, Great Ormond-street, in furnished rooms, while their house was building for them by Webb, who had just left Street to set up on his own account. The "Red House," as it was called, was built in the little village of Upton, close to Bexley Heath. It was an L-shaped building on plan, of two stories, with a high-pitched roof of red tile, plain externally, but solid, and of fine proportion. A projecting oriel on the western side overlooked the bowling-green, and this room, the decoration of which was to be the work of years, Morris declared he meant to make the most beautiful room in England. Nearly everything had to be designed and made, and Webb, who was not only an architect, but equally ready to design tables and chairs and lamps, helped. The first notion of the firm of Morris and Co. sprang up between the friends, and their associates, Madox Brown, Burne-Jones, and Rossetti, Faulkner joining them to keep the accounts. Their first commissions were for the decoration of two new churches by Bodley, one St. Martin's, Scarborough, and the other St. Michael's, Brighton. The chancel roof of the latter was painted by Webb, Morris, and Faulkner with their own hands, and the glass was made from designs by Madox Brown and Burne-Jones. In 1865 Morris had tired of the "Red House," and took himself and the firm to Queen's-square, Bloomsbury. The membership of the firm had changed somewhat by then, but Webb was still designing furniture. In 1875 the dissolution of the firm was effected, and the business came under Morris' sole management and proprietorship; but Burne-Jones and Webb still continued to design for it, and the friendship of the three lasted till the end of Morris' life, on October 3, 1898, when they were with him almost daily during his last illness at Kelmscott House, after his return from Norway.

One of Philip Webb's early buildings may be seen on the north side of Lincoln's Inn Fields—a red-brick block of offices—and his largest work in London is the mansion put up in Palace Green, Kensington, for the late Earl of Carlisle in 1868. Webb built one church; it is at Brampton, in Cumberland, and he finished the uncompleted tower, which he designed in 1905, after his retirement. It is said that between 1860 and 1900 he carried out no less than fifty to sixty houses in various parts of the home counties, and made many extensive additions to old houses. One of the latter was a big enlargement of Forthampton Court, near Tewkesbury, in 1891. Among his most notable new mansions, and perhaps the chief of all his undertakings, was "Clouds," near Salisbury, for the Hon. Percy Wyndham. This was finished in 1886, and rebuilt after the fire in 1890. "Rounton Grange," at Northallerton in Yorkshire, was erected under his supervision, in 1875, for Sir Lothian Bell. Among other work in town, Mr. Val Prinsep's house and studio at Kensington may be mentioned. It stands at Holland Park, next to Lord Leighton's house, and will be found fully illustrated in our issue of October 29, 1880. It is notable as the first artist's house of its kind built in the Metropolis, its date being 1865, and illustrates a type which brought others fame subsequently, accounted by some the pioneers of a movement for which Webb did so much and so well.

Philip Webb was always retiring in disposition, and he would never willingly allow his designs to be illustrated. The working drawings of Val Prinsep's house were lent by the owner, who was the most genial and capable of painters.

Philip Webb's work included many decorative schemes of various kinds, and he like James Whistler and E. W. Godwin, was for a while influenced keenly by Japanese ornamentation. He designed much cast-iron work in the way of grates with hobs, and such-like things, wallpapers and tiles, as well as tapestries. For these objects his working drawings were always painstaking and

* Individuality. By CHARLES FRANCIS ANNESLEY VOYSEY. London: Chapman and Hall, Ltd. 3s. 6d. net.

beautifully executed, the ornament being delineated sometimes direct from Nature. He was in no sense imitative of, or limited by, any period or style. On the whole, he probably regarded a good deal of the work of the time with impatient contempt, and he was not averse to saying what he felt. He was a joint founder of the Society for the Protection of Ancient Buildings. He retired from practice in 1900, and settled down at the little village of Worth, in Sussex, where he occupied a cottage, "The Caxtons," on Mr. William Blunt's property. He died peacefully in his home on April 17, and the funeral took place at Golder's Green on Tuesday. He had no connection at any time with the Royal Institute of British Architects, or any other professional society.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A meeting of the Royal Institute of British Architects was held on Monday evening, the President, Mr. Ernest Newton, A.R.A., in the chair. Mr. E. Guy Dawber, Hon. Secretary, announced, with regret, the decease of Mr. Samuel Flint Clarkson, retired Fellow, who until a few years ago took a prominent part in the activities of the Institute, serving for seven years on the Board of Examiners, and also on the Practice Studying Committee. He had also filled the offices of Hon. Secretary and President of the Architectural Association. Mr. Dawber added that he also deeply regretted to announce the death of a young Associate member of the Council, Mr. Samuel Douglas Topley. Although only thirty-one years of age, Mr. Topley had already made a name for himself by the prominent part he had taken in the discussion of questions which had agitated the profession in recent years, notably that of Registration. A clear thinker, an able speaker and debater, punctilious in courtesy, and yet firm in his convictions, the Council held him in high esteem, and deeply deplored his loss. He moved that a vote of condolence be forwarded to the relatives, a motion adopted in silence. Mr. Dawber said he had further to announce the deaths of Ernest Day, of Worcester, Fellow; William Henry Duffield, Fellow; and William Basil Stefanoni, Licentiate.

THE DESIGN AND CONSTRUCTION OF BUILDINGS FOR INDUSTRIAL PURPOSES.

A paper on this subject was read by Mr. Segar Owen, Fellow, of Warrington. He observed that the various buildings comprising the usual factory undertakings may be roughly stated as follows:—Office and administrative department, raw goods stores, general factory buildings, warehouses for finished goods, power plant buildings, including boiler-house, attendant and by-product buildings. The architect's aim in the planning of such a factory must be the arrangement of these buildings, and the departments comprised in each, in such order as to insure the passage of the raw materials through the successive shops until the goods reach their final state, and are stored in the warehouse, for distribution to the customer. This passage of the articles under manufacture must, if possible, be arranged without re-entering or recrossing departments through which, in course of manufacture, they have previously passed. The Administrative Department must not be confused with the general office, but is a departmental section concerned in the management of the factory itself, and generally includes the following:—Time and wage-office, cloakrooms, bathrooms and latrines, clothes-drying room, rest-room, surgery, manager's and clerks' offices. This block must be placed in such a situation as to allow of the rapid distribution of the workpeople to the several departments. Such position should be so arranged that the workpeople can reach their own particular work by galleries or passages, without traversing the floors of a shop in which they are not engaged, and where possible, sidings should not have to be crossed by the employees. In factories made up of a large number of isolated buildings, or

in single factories covering a considerable area of ground, it is desirable to divide and duplicate the administrative department. In plan, it should include an assembly vestibule, out of which opens the wage and time checking room. Opening from the vestibule are the cloakrooms, with lockers for each individual employee. Where the hands number some hundreds, an attendant's office should be in full command of the cloakroom, and other offices opening from same. Each line of lockers in the cloakroom should be set out in such a way that the men and girls passing into the works will not block up any gangways. The latrine buildings should have the walls of white-glazed bricks, and partitions carried some inches from the ground, and to a height of 6ft. or 6ft. 6in.; plain, unmoulded doors; tiled floors laid with proper falls to gully, so that the buildings can be thoroughly cleansed with a hose-pipe. Opening from the cloakroom should be the bathrooms; these formed usually as shower-baths, with simple arrangement for hot and cold-water supply, the shower enclosed in a small partition off which is a small dressing-space. In cases where the process of manufacture requires it, the usual cast-iron bath is arranged for. Again adjoining the cloakroom should be a drying-room, with glazed-brick walls and concrete floor and ceiling, the latter having slung rods, with a number of hooks on which wet garments are hung as soon as the employees have entered the works. The room should have a steam battery and fan to circulate hot air through the clothes for the purpose of drying them. The manager's office and the clerks' office should, where possible, be placed in such a position as to overlook the factory. There are still two departments required to complete this block, namely: the first-aid surgery and the rest-room. The surgery is a small room with tiled walls, tiled floor, having small operating-table, couch, medicine-chest, antiseptic ointments, bandages, plain splints, with small sink, hot and cold water, electric radiator, and electric kettle. In large works this surgery would be attached both to the male and female side of the administrative block. Rest-rooms are required only where girl labour is employed, and should be as unlike any part of the factory building as possible. We must now decide which of the several forms of present day construction will best suit our requirements. The following are offered to us for choice:—Brick structure wholly, with wood or cement floors, and with wooden or steel roofs; steel and brick composite buildings, with wooden or slung concrete floors, steel or wooden roofs; steel structure; reinforced concrete structure. Some twenty to thirty years ago the forms of composite buildings varied very considerably, and were designed in both iron and steel in peculiar forms for each undertaking. Gradually out of this somewhat chaotic state the designs became more uniform; joists, girders, and roof principals were catalogued, and almost all forms of major items in the buildings were carried out in a generally-recognised design. Girder connections, seatings, and brackets have been further standardised, and perhaps we are now too well supplied by manufacturers and constructional engineers with catalogues of these details, which, whilst forming a constant and convenient reference, are inclined to check research and enterprise in the way of new forms. The result has been to reduce cost and expedite the work. The composite building is the one most universally in use for all classes of factories, both of heavy and light construction, and is capable of dealing satisfactorily with the greatest of all former troubles, namely, large spans and heavy loads. Another and a newer form of construction is demanding serious consideration at our hands—i.e., reinforced concrete. One hesitates to accept this form of construction for the average factory, on account of the many changes that are constantly being made, especially as regards machinery. These changes invariably lead to the cutting of floors, rearrangement of loads and points of support, and during these changes the cutting of a main member might possibly mean a partial collapse. The

ideal factory for reinforced concrete is one made up of units of space and loads as regards floor area and machinery, each floor being set out without much possibility of change. The exterior design of a reinforced-concrete factory building should be of a block type, straight piers, beams, and lintels, with the cornices and strings on a simple, bold line. In the construction of the modern factory we consider the walls only as a means of enclosing a covered space to protect it from the weather, and possibly to give some support to more or less important floors and details of plant. In buildings of no great height and of no great storage weight, the walls, as piers between the windows, still perform the office of weight-carriers; but as floor-loads have increased, and spans and openings widened, the concentration of the load on to the brickwork between the windows has been too great to be safely carried by this material, without a considerable increase in the size of these piers, and consequent loss in floor space and window area. This concentration of load on to the piers brought about the substitution of the steel stanchion as the weight-carrier, and at a later date the building up of a skeleton steel structure of outer and inner stanchions, floor-girders and joists, with steel window lintels and sills. These skeleton structures are afterwards clothed with a skin of brickwork or concrete between the main uprights. The construction and finish of factory floors demand care and experience. We have constantly brought to our notice different forms of floor-construction—fire-resisting blocks, patent joists, etc., but most architects prefer to use the ordinary steel joist and concrete-filled floor, and, in special cases, girders with concrete filling, boxed out and strengthened with mesh metal. The weights of the loads to be carried must be carefully calculated, so that there will be no straining of the structure, and the surfaces of the floors must be prepared to take the finishing necessary for the special class of factory dealt with at the moment. These finishings may be roughly taken as follows:—Engine and power-stations, hard tile; boiler-houses, blue brick; chemical factories, blue acid-proof brick, with acid-proof asphalt; factories, granolithic paving, asphalt and wood blocks. For a large type of engineering works, creosoted blocks of redwood, 12in. by 7in. by 3in. thick, laid on a 6in. bed of concrete and 6in. to 9in. bed of ballast, the blocks afterwards grouted in cement, provides an excellent floor. A more expensive floor for the same class of building is formed with the usual street-paving wood-blocks, 9in. by 3in. by 4in. thick. For a factory where more delicate manufacture is carried on there is nothing at the present time that approaches maple-wood block. Trucking and hard wear come alike to this excellent timber. These blocks must be laid when the shops and the floating are thoroughly dry, as it is a timber that will absorb any amount of moisture, and will then expand to such an extent as to lift itself from the concrete-floor floating some 3ft. to 4ft.—that is, if held tight at the walls. The life of such a floor seems to be endless, and nothing seems to disturb it or cause the grain to rise and give the surface an appearance of roughness. Instead of maple-wood block, boards of the same timber, laid and nailed to fillets embedded in the concrete, form an excellent floor. Concrete floating, granolithic paving, and tiling, all have their various uses in one or other part of the factory; but whatever be the material used, it should be of the best quality, and laid in a workmanlike manner. The roof of a factory is a most interesting detail. The different types of roof principals have become practically standardised. When called upon to erect a factory in a district with which I am not familiar, I generally apply to the nearest observatory for the records of winds and gales, also for particulars of rainfall. Such information is most readily given, and one has then the satisfaction of calculating all details on a sound local basis. The roof of the average two or more storied building is usually a single span of the ordinary type of principal suitable to the width, with probably

a certain proportion of skylight area, and in some cases peculiar details as regards louvre ventilation. The lighting of large one-story areas presents more details of interest. The north and east light is the steadiest for factory buildings; and the usual type of roof is that known as the Weaver roof, in which the northerly side is wholly glazed, and the southerly side slated or covered in some other form. The angle of the north pitch is a matter requiring careful adjustment, and is governed by the situation of the works, either at home or abroad. In England, and in dull climates, and on the western slope of a valley, the angle with the horizontal must be reduced to about 60deg. The slated side will be at a pitch of about one-third the span. This angle of 60deg. may require to be varied in factories where an unusual amount of ventilation is required. As a rule, this ventilation is provided in the form of open louvres framed in the ridge of each roof, and running the whole length from parapet to parapet. These louvres project some 2ft. to 5ft. above the ridge. If, then, the pitch of the glazed side is too upright, the outlook from the floor, or working level in the shop, and farthest from the skylight, is into this line of louvres, with the result that the shop is unnecessarily darkened. In such a case the pitch of the glazed side of the roof should be reduced, and its exact angle fixed by a trial by diagram. If the shop is one requiring not only ventilation, but a very considerable amount of light, the slope of the louvre roofs should also be glazed. The craving amongst manufacturers for large floor-spaces with as few supports as possible brings us to the problem of with what cross-spacing can one economically carry these roofs. Thirty feet to 33ft. seems to me the economical limit; beyond that, special and costly girdering is necessary. All gutters for this class of roof must be adequate, say 18in. to 2in. wide, strong cast-iron, with rebated joints, and fitted with proper boxed cistern outlets. There is no necessity to have these gutters with tapering cast, as they will clear themselves of water to outlets 50ft. to 60ft. apart, and in case of replacement there is then no likelihood of delay and inconvenience, due to the necessity of casting a special taper. If the length between outlets is greater than 60ft., the depth and width of the gutter must necessarily be increased. If stanchions are used as the roof support, downspouts will be carried in the hollow of the stanchions. The question next arises as to the most suitable forms of roof-covering. Special houses, such as boiler-houses, acid-chambers, or chemical buildings, would require special treatment; but for factory roofs generally it is desirable that they should be boarded, the covering after being either slate or patent roofing, according to position, suitability, and cost. The most successful roof-framing and covering for such as the English climate is one framed with purlins some 3ft. 9in. to 4ft. 6in. centres, covered with dressed boards 1in. to 1½in. thick, tongued and grooved, and laid directly from purlin to purlin, covered with felt, and with vertical and horizontal battens, and afterwards slated. Certain difficulties are experienced with light steel principals, where they are required as supports for special stationary loads, travelling loads, shafting-gears, and conveyers. For stationary loads, there is no difficulty in so bracing up the members of the principals as to take up the load required without fear of strain or collapse. This also applies to provision for travelling loads. But for shafting-fittings, they have not the advantage that the old wooden roof had in carrying lines of shafting without any risk or vibration. With the steel roof, the solid tie-beam of the wooden roof is replaced by a flat steel member, offering little or no possibility of attachment, and in itself being unable to carry any load. It therefore becomes desirable in most works to carry the lines of shafting on the main lateral girders of the roof; but any shafting required in the centre of the bay must be provided for, either by constructing the tie member of the principal as a joist or channel section equal to the load, or carrying it on a specially constructed framework of girders framed and

bolted to columns erected for the purpose, and in that case standing clear altogether of the principals. Many excellent forms of patent roof-glazing are now turned out by English manufacturers. Most of the patentees have carefully considered, and can now with equal facility glaze their bars into timber, steel, or concrete connections, and provide, an excellent form of weatherproof glazing, even with a pitch as low as one in thirty. Rapidity of execution, easy renewals of broken sheets, renewals of special parts, are not the only advantages. By special arrangement of the bars, one can be certain that condensation will not drop from the roof on to the floor beneath. Where possible, the sheets of glass should not be of greater length than 9ft., though if required they will be provided up to 11ft. No one nowadays undertakes the erection of a factory where valuable machines are installed, and the product of the factory is of considerable value, without installing a system of fire-protection sprinklers. As a rule, these tanks are filled from the town water-mains; but in districts where the head of water is not sufficient to rise to the tank, a set of pumps is installed, which become operative as soon as any of the sprinklers are open by the action of a fire. Probably under no condition can an outbreak of fire be more readily controlled or localised than in a one-story building. On the roofs covering these areas there must be no unnecessary obstacle that will impede the assembling of hoses and reels. Gable ends should be hipped against the outer parapet walls, and if the lengths of roof are considerable, a break at one or other of the dividing walls would be an advantage in dealing with a fire. Department divisional walls should be carried up, as required by the London Building Act, 3ft. 6in. or 4ft. above the adjoining ridge or line of gutter; and, finally, no important works building should have overhanging rafters at the eaves. The principles which govern the factory staircase are those which apply to all public buildings—namely, suitability and directness of access. No circumstances must be allowed to cramp or confine them into out-of-the-way corners. Of a width convenient for the numbers using them—and if this means a greater width along the step than from 7ft. to 8ft., the flight must be divided by suitable plain round handrails with strong iron standards, also with plain handrails fixed on the wall side. No flight should be of a greater number than twelve steps, and these not greater than 6in. rise, or less than 11in. on tread. All landings must be full half, and the outlet, or doorways, at the top or bottom must open into as large a collecting area as possible. The doors must open out from the staircase; and the flights should be well-lighted and ventilated from the sides away from the factory. The materials used for the steps should be either stone or concrete; in some cases, slabs of timber, of not less than 3in. thick, may be used. Iron fire-escape staircases are quite familiar to us all. With these, it is desirable that the risers of each step, so often omitted altogether, should be solid or perforated. Factory windows in the external walls vary very considerably; but the most usual form is the large steel and wrought-iron standsheet window, which is equally suitable for brick, steel-framed, or concrete structures. With the decrease in the size of the brickwork pier, these windows have been increased very considerably in width, and I have used them to the extraordinary size of 21ft. high by 14ft. wide; these particular windows requiring a framework of steel behind them, to support them against wind-pressure. The shops which are found in large bridge-building undertakings consist of a central bay of 100ft. span, and some 50ft. to 60ft. in height. The supporting stanchions carrying this roof are also arranged to carry travelling cranes, which run from one end of the building to another. In the case of particularly heavy cranes, the gantry girders sit directly on the head of the stanchion, which at that point reduces in size, and is carried up to receive the roof. Adjoining this main erecting-shop, usually on each side, opening out under the gantry girders, are buildings of one, or even two,

stories in height, of smaller spans, and these act as fitting-shops, in which are carried out the lesser parts of the manufactured article which is assembled in the central bay. As a rule, these side spaces are occupied by drilling, screwing, and finishing-machines, and are constructed wholly in steel, the upper story being lighted from the roof and the lower from windows at the side. In some cases, lighter travelling-cranes are fixed in these outer shops, and this handling of goods by crane and lesser weights by runways is a considerable factor in the equipment of works of this character. The linking-up of one line of travelling cranes to another is frequently required, and is formed by an arrangement of fixed connecting girder, which thus allows of an assembled portion of any machinery to be carried to any portion of the side or central bay. These structures are not filled in with brickwork, but are wholly glazed on steel frames from pier-stanchion to pier-stanchion. In a many-storied factory the questions of importance, as regards construction, are those of support and floor-girders. As regards supports, these in a composite building will be either cast-iron or steel, and there is much to be said for both. Cast iron, in case of fire, has properties for resisting the action of fire that steel does not possess, and, on the other hand, steel stanchions will give a rigidity to a building and occupy less space in proportion to the load carried. Cast-iron columns are now designed with box-heads providing seatings and connections for the floor-girders and joists in the cap of the column carrying the floor, the column of the upper floor sitting on the top of the box-head, on a machine-dressed face. Stanchions are built up and are practically continuous through the floors, with the girder-seating connections riveted to the side. As regards the warehouse for finished goods, the floor-level of this building must be arranged so as to be suitable for loading the goods on to motors or railway-waggons. As a general guide, 4ft. above the railway metals is usual; and on the loading side the roof of the warehouse, or a lean-to roof, is carried over the first or second line of railway metals, to protect the goods when being loaded. In cases of extremely heavy loads, the goods are loaded by cranes running from the warehouse over the sidings, or the trucks enter the works itself and are loaded by the crane used inside the shop. The power required in the ordinary factory—either steam or gas, or electric—has in no case in my experience approached a greater total than 10,000H.P., and that an aggregate of many engines generating the power up and down the works. The walls should have glazed brickwork or tiled dado to a height of 5ft. or 7ft. Above this level the brickwork should be buff, or other coloured, sound, hard brick, carried up to the line of the eaves. All angles should be rounded, both at the junction of the walls and floor and on the piers. All floors should be finished with hard tiles. The roof either steel or timber; in the latter, all members dressed and varnished. The roof boarded, felted, battened, and slated; with a large proportion glazed; a line of pivot-hung ventilators, all double rebated, and opened by screwed gear. For factory work between 55ft. to 85ft. is the usual width of the engine-house. It is desirable that the span should be in one, to cover each set of engines, and the height of the roof such as to allow for gantry wall girders carrying a running crane. Cranes are useful not only in assembling the engine when first erected, but also in case of repairs to the different parts. Some very considerable changes have taken place in the requirements of the engine-house during the past eight or ten years. Most of us will have laid engine-beds of solid stone and of solid concrete, possibly with small adjoining cellars or houses formed for the condenser; but, at any rate, the bed upon which the engine was built was itself solid throughout. Gradually, more and more of the space around the engine-bed has been required by the engineer, for some pipes or fittings in connection with the machinery, until at the present time the whole space around the bed is formed as an open void covered at the level of the engine-bed. Following upon

this, the engine-house floor is usually on the first-floor level, and the space around the engine-beds, at the ground-floor level, is left as a well-lighted chamber, for the engineer to fix the condensers and other parts. The concrete in the beds themselves is pierced through and through for connections, and is massed where the loads and the shocks are greatest, and in parts reinforced with steel bars, to avoid the risk of fracture. The channels thus gained are of immense advantage in building up the engine and making attachments. The architect is looked to to produce solid work capable of great strains and shocks; this can only be accomplished by constant inspection of the materials and workmanship. The cement must be well up to standard tests, and having some tradition as to manufacture and durability, the aggregate clean and not too large, and of a gritty nature that will bind well with the cement. In the boiler-house all brickwork of walls, beds, and flues must be grouted fully and thoroughly. For roofs, steel principals are best, preferably with steel-angled purlins, covered with slates copper-wired to the latter. Open steel-louvered ventilators the whole length of the shed, and the roof glazed in a proper proportion, to give light over the boilers and to the stokers. It would appear from experience that, for factories requiring a steady head of steam, the Lancashire type of boiler seems the oftener to be installed. If so, as a rule it falls to the lot of the architect to carry out the boiler-seatings—usually special seating-bricks, which, whilst giving ample support to the boiler, cover as little as possible of the boiler-plates, thus giving the gases full play on the heating-surfaces. Should the boiler be filled with super-heaters, the boiler-house will require to be of greater span, and the back flues will require rearrangements. Economisers nowadays form part of the boiler plant, and are placed in buildings of the same character as the boiler-house, provision being made for ready access to the cleaning spaces, and ample ventilation above the sets of tubes. In most factories it is desirable to consider the ventilation and heating as one plant. Small shops, no doubt, can be adequately ventilated by means of cross-windows and some form of extractor; but in the large areas of one-story buildings, it becomes necessary to provide some mechanical means of propulsion that will, by the delivery of an adequate supply of fresh air in summer, and fresh heated air in winter, remove the whole of the foul air from the factory. Such apparatus consists of a fresh-air inlet-tower, a heating-battery, and fan, with steel ducts running through the roofs, delivering fresh air to every point in the factory. The heating-batteries are supplied with steam at a low pressure of 10lb. to 15lb. per inch, and the fresh-air duct is fitted with a valve that will enable the air in the shop to be recirculated. Even the means of opening windows and skylights should not be omitted, for fresh air distributed by these fans is not like the direct current from without. In this short paper I cannot pretend to have opened out to you to-night any new theories, or laid down any definite axioms for future factory design; but I have tried to put before you matters connected therewith that I find occurring daily in work under my control, based upon experience gained under my father, the late William Owen, and in working out, under Sir William Lever, problems in factory construction under conditions that should insure to the employees health, comfort, and the best possible social conditions.

Sir William Lever, Bart., proposed a vote of thanks to the lecturer in a breezy and anecdotal speech, observing that he commenced the building of factories at Port Sunlight, with the late Mr. William Owen, the lecturer's father, as architect, and had since gone on with his son, developing the plans with the aid of the experience gained and as fresh requirements demanded. He should like to see some cheapening of factory buildings. Every form of plant, power, machinery, equipment was steadily being reduced in cost as time went on; but

the outlay per cubic foot of building operations had as steadily advanced. He held that under the pressure of building by-laws manufacturers were compelled to construct their works with unreasonable solidity and substantiality for the purpose, having regard to the fact that in all industrial enterprises circumstances were likely to arise under which the entire premises would have to be scrapped. Local authorities should regard all factories and engineering works as liable to be discarded and replaced as were overcoats. Factory buildings were far too permanent, and therefore too costly, for the purpose, and all this useless expenditure had eventually to be borne by the public. Having referred in high terms to Mr. Segar Owen's work as an architect, Sir William diverged to the details of factory planning, remarking that he could not speak too well of the advantages to employees of the provision of ambulance, rest, and bathrooms. Anything which tended to maintain the health and vitality of employees increased their industry, and incidentally their economic value to the manufacturer. It was his aim to raise the social condition and moral tone of the factory girl to that of the shop girl. Reverting to constructional matters, he would urge upon local authorities that only the external walls of factories on the boundaries of the site should be permanent, and these should be of as solid a character as possible; the internal walls should be easily torn down and reconstructed to allow of the changes constantly progressing in every trade, for there was no finality in the various departments of a manufacturing business, and shrinkages and expansions of the several branches should be anticipated. He considered that the price for building factories ought to be reducible more nearly to a fixed standard; at present it varied from 3d. to 8d. per cubic foot in various localities. He believed that it would pay architects to specialise in designing certain classes of buildings as they did at present in the styles and orders. London, after all, was the principal manufacturing centre in England, and in the world, and was not surpassed, as some supposed, by the Midlands and South Lancashire. The London Building Acts imposed such needless restrictions, especially on the internal areas, that manufacturers and owners of large businesses, such as printers, were being driven beyond the borders of the county in every direction, as under these Acts economical production was impracticable.

Mr. Matt Garbutt seconded the vote of thanks. He held that the architect who did not specialise would entertain broader views, would be more ready to adapt himself to circumstances, and would produce better designs. The severity of the restrictions under the London Building Acts was evidenced by the numerous factories that were being removed to just without the boundaries of the County of London.

Mr. William Dunn referred to the injurious effect on factory construction of the London Building Acts. The most effective span for a saw-back or Weaver roof was from 28ft. to 30ft.

Mr. Max Clarke found the chief difficulty under the Building Acts was the restriction of the area to 250,000 cubic feet. If the London County Council granted a special concession on this point they insisted upon absolute adherence in every detail to the plans submitted and approved, and hence no modifications which suggested themselves to the building owner or his architect while the plans were being worked out could be adopted. He thought Mr. Owen gave too great a width for factory staircases; they should never be so wide as 7ft., and to construct treads and risers of hardwood would be unduly expensive. To place an engine on the first floor often meant a risk of nuisance to neighbouring premises by vibration. Flat roofs for factories were more economical and more satisfactory than slate roofs. What was, he asked, the standard height for present-day factory chimneys?

In putting the vote of thanks, the President remarked that he had often thought that the profession lost a great architect when Sir

William Lever became a manufacturer. When talking with Sir William at Port Sunlight one day, Sir William said he wished that he had been an architect; he at once offered to change places with him, and although Sir William did not jump at the proposal, doubtless because he had doubts of the speaker's business capabilities, he would assure him that the offer was still open.

In replying to the vote of thanks, Mr. Owen said the restriction in the London Building Acts of area to 250,000 cubic feet was ridiculous and impracticable. So long as an engine was firmly set on its bed beyond the possibility of rocking, it must be immaterial whether it was in a basement or on the ground or upper floor. Granite was the best paving material for a factory, and for very small areas a very hard vitreous tile. The average height of the factory chimneys now being built was about 200ft. He believed that factory walls were built under existing legislation much more substantially than there was any need. He had yet to experience the intense wind-pressure which walls, roofs, and chimneys were theoretically constructed to withstand.

ARCHITECTS' BENEVOLENT SOCIETY.

The sixty-fifth annual general meeting of the subscribers and donors to the Architects' Benevolent Society was held in the Rooms of the Royal Institute of British Architects, Conduit-street, Hanover-square, W., on Tuesday afternoon. The President of the Institute, Mr. Ernest Newton, A.R.A., occupied the chair.

The annual report of the council of the society was read by the hon. secretary, Mr. Percivall Currey, as follows: The council regret that they have to record a falling-off in the amount of subscriptions, as compared with last year, of £27 18s. It is to be feared that this diminution may be increasingly affected by the war during the coming year unless those who are in a position to do so assist the society by either augmenting their subscriptions or assisting the council to obtain new subscribers. The sum of £1,150 15s. has been distributed in grants and pensions—an increase of £141 as compared with the previous year. The capital account, on the other hand, has been increased. The society in this connection is greatly indebted to the generosity of Mr. Henry L. Florence, vice-president, who last June presented a donation to the funded property of the society of £1,000 City of London Corporation 3½ per cent. bonds, 1914, fully-paid scrip. For many years Mr. Florence has manifested his interest in the society, both by active work as a member of the council and by contributions. The capital was further increased by a donation of £550 made by Mr. George Neat, acting under the discretion given to him by the will of the late Mr. Frederick Ingle, of 24, Queen Anne's-gate, S.W., and Chesterworth, Lincolnshire. A further instalment of £500 was received from the executors of the late Mr. William Glover, making the total amount received to date from this source £1,200. The society is also indebted to the Chelsea Arts Club for a donation of £50, and to the following donors: Mr. Balfour Abercrombie, £10 10s.; Mr. C. Stanley Peach, £10 10s.; Mr. Reginald St. A. Roumieu, £10 10s.; Mr. Benjamin Inglelow, £10 10s.; Mr. W. H. Scrymgeour, £10; Mr. Frank Lishman, £6 13s. 6d.; and to various donors of smaller sums. In the autumn the council were informed by the executors of the late Mrs. Arthur Cates that she had left the society a legacy of £1,000. As this amount was not, however, received before the end of the year, it is not included in the year's accounts. Shortly after the declaration of war, the Architects' War Committee, representative of the architectural profession as a whole, was formed, and issued a special appeal for contributions for the relief of members of the profession or their dependents who are in distress caused by the War. In November this committee handed over to the society the sum of £591 19s. 6d., with the request that the sum

should be administered in the relief of such cases, but that assistance need not necessarily be given only in the form of charitable doles. The council have opened a separate account at the bank for this and any subsequent amounts that may be received from the Architects' War Committee, and are distributing grants among applicants, as well as contributing to the funds of the Professional Employment Committee and the London Society. The following, being the five senior members, retire by rotation from the council: Mr. E. Arden Miuty, Mr. Wm. Woodward, Mr. Arthur Ashbridge, Mr. Sydney F. Bartleet, and Mr. E. Guy Dawber. To fill the vacancies caused by these retirements, the council nominate Mr. W. Campbell Jones, Mr. Walter L. Spiers, Mr. Percy B. Tubbs, Mr. W. Henry White, and Mr. Edward Greenop. The council again nominate Mr. Henry L. Florence and Mr. Reginald St. A. Roumieu as vice-presidents. The council earnestly hope that they may be assisted by the active co-operation of members of the architectural profession in obtaining fresh contributions, as there are indications that assistance will become a matter of greater urgency in the crisis through which the country is passing at the present time, and that the resources of the society will be heavily taxed.

In moving the adoption of the report, the President expressed the satisfaction he felt that the society had at last reached the goal at which the council aimed of a total capital of £20,000. He would suggest that, in view of the great needs which would result from the war, an effort be made to raise this to £30,000. It was to him a matter of great regret that so many architects were suffering from lack of work, and it was evident that this unemployment in the profession would be further increased by the veto placed by the Local Government Board upon the execution of works by local authorities. If all well-to-do members of the profession would follow the generous example set by Mr. H. L. Florence, much privation by architects would be prevented, and he would remind intending donors who were hesitating that he gave twice who gave quickly. In view of the veto exercised by the Government on municipal works, it might, some thought, be necessary to make an appeal for outside help; but he deprecated such a step being taken unless the case was urgent. Subscribers could assist the society best by advocating its claims among their friends. Assistance by way of employment was being given to architects in temporary difficulties throughout the United Kingdom by the Professional Employment Committee and the London Society, and he would appeal to his colleagues for additional subscriptions and donations, not only in London, but throughout the country.

Mr. Howard Chatfield Clarke, president of the Surveyors' Institute, seconded the adoption of the report, which was carried unanimously.

The following were elected as the council for 1915-16, on the motion of Mr. E. Guy Dawber, seconded by Mr. Alfred Saxon Snell:—President: the President R.I.B.A. (Mr. Ernest Newton, A.R.A.) Vice-presidents: Mr. H. L. Florence and Mr. Reginald St. Aubyn Roumieu. Ordinary members: Messrs. Henry Lovegrove, C. R. Baker King, W. D. Caroe, H. Chatfield Clarke, Horace Porter, Walter L. Spiers, W. Henry White, Wm. Grellier, Andrew T. Taylor, Basil Champneys, Stanley Peach, W. Campbell Jones, Percy Tubbs, Edward Greenop, and the President of the Society of Architects (Mr. E. C. P. Monson).

Mr. H. L. Florence (who was received with cheers) moved, and Mr. Henry Lovegrove seconded, a vote of thanks to Mr. W. Hilton Nash on his re-election as hon. treasurer. In acknowledging the motion, which was agreed to, Mr. Hilton Nash remarked on the excellent attendance of the council during the past year—an excellent proof that interest in the society was keen. In some earlier years they had great difficulty in insuring a quorum at the meetings, but in 1914 the average attendance of council was fifteen.

A vote of thanks to Mr. Percivall Currey,

and his re-election as hon. secretary, was unanimously passed, on the proposition of Mr. H. Chatfield Clarke, seconded by Mr. Sidney F. Bartleet. In responding, Mr. Currey said they were greatly indebted to Mr. Rudolph Dircks, the assistant secretary, on whom most of the onus of the work fell. Mr. Dircks, at the call of the President, who cordially endorsed Mr. Currey's remarks, also responded.

The retiring auditors, Mr. Edward Greenop and Mr. W. Henry White, were heartily thanked for their services during the past year, on the motion of Messrs. R. St. A. Roumieu and Percy B. Tubbs. Mr. Greenop replied for Mr. White and himself, and on the proposition of Messrs. Hilton Nash and Lovegrove Mr. Herbert Shepherd and Mr. Osborn C. Hills were elected as auditors for the ensuing twelvemonths.

In proposing a vote of thanks to the President, Mr. George Scamell observed that when he first was a member of the council forty years ago, the capital of the society was but £3,000; he was thankful to have lived to see it rise to £20,000. The motion was supported by Messrs. Currey and Shepherd, and was duly acknowledged from the chair.

At the termination of the meeting additional donations were received from the President, and Messrs. H. Chatfield Clarke, Percivall Currey, Albert E. Kingwell, C. H. Löhr, Henry Lovegrove, and W. Hilton Nash.

BRICKS WITHOUT CLAY.

Making bricks without clay is what is now proposed, and a plant is being built in Illinois. According to the *Railway Age Gazette*, the process consists in chemically combining any coarse material containing silica with a binder of finely-divided particles of silica, alumina, potassium, or sodium in suitable proportions to insure a binder with a low fusing point, as compared with the coarse body material.

The bricks are moulded under high pressure, preferably in a dry state, and are fired in a manner similar to that used in making ordinary brick, but the time required is not nearly as long. Bricks made by this process have been tested and have shown very satisfactory absorption qualities, and have withstood a temperature of 2,900deg. Fahr. without cracking or showing damage. They have undergone crushing tests of 20,000lb. per square inch without failure. The samples examined show a texture capable of taking a high polish, and the grain is so fine that clean-cut carving is possible; but these qualities evidently depend on the character of the material out of which the bricks are made.

It is proposed to use the tailings from coal mines at the new Illinois plant, and it is stated that, on account of the wide variety of materials that can be used in the new process, including many waste products, these bricks can be profitably made in localities where ordinary brick cannot be produced on account of the absence of suitable clay.

A parochial hall erected in the grounds of St. Paul's Church, Havelock-street, Newcastle-on-Tyne, was opened on Saturday. It has cost £2,715.

The Local Government Board have sanctioned the following loans to authorities in Ireland for housing purposes: Dalkley Urban District Council, £10,500; Dundalk, £10,300; Manorhamilton, £3,060; and Arklow, £1,400.

The Southampton Education Committee have decided to reconstruct the Eastern District Council School, the front of which now faces Albert road. The new school is to be of three stories instead of one, with a roof playground for the boys. It is now being erected on the site of the playground of the old school, and it will have its front in Anderson's road. The old school is to be pulled down, and a portion of the area it occupies will be converted into a playground. The contract for erecting the new school has been given to Messrs. H. Stevens and Co., of Northam, and the foundation was laid on Tuesday week. The plans were prepared in the office of Mr. J. A. Crowther, the borough engineer.

OBITUARY.

We regret to announce the death, at the advanced age of ninety-two years, of Mr. George Holme, formerly in practice in Liverpool as an architect, which occurred on Saturday night at his residence, Plas Trevor, Llandudno. Among the important buildings in Liverpool which Mr. Holme designed and erected in conjunction with his nephew, the late Mr. Frank Holme, are the Conservative Club in Dale-street and the County Sessions House in Islington. For many years he held the office of bridgmaster and surveyor to the West Derby Hundred. He lived at Moor Hall, Aughton, until his retirement, about twelve years ago, when he went to reside at Llandudno. A man of retiring disposition, Mr. Holme did not take any part in political or other local affairs; but he was very well informed and greatly interested in archaeological matters, and had an excellent memory until a few days before his death. He remembered seeing, as a child, the first railway train leave Edge Hill Station, and also remembered driving to Edge Hill to catch the mail to London.

The death took place on Monday, at his home, 26, Baker-street, Nottingham, of Mr. John W. J. Barnes, F.S.I., senior partner in the firm of Barnes, Booth, and Richardson, surveyors, of King-street, Nottingham. The late Mr. Barnes, who was about sixty-six years of age, was a native of Surrey, being first employed by a firm of London quantity surveyors. He was quantity surveyor to several London railways, and a prominent Freemason. For twenty years he acted as quantity surveyor to the Nottingham Corporation, and was employed on most of the big buildings of the city, including the Guildhall, the workhouse, the old Great Northern railway-station, and the present Midland station. He laid out the Colwick Park racecourse, and has been engaged on the new stand at Birmingham erected in place of the one burnt down by suffragists. A member of the Council of the Surveyors' Institution, he was well known as an arbitrator in several local building-trade disputes, and worked with the late Mr. Arthur Marshall, F.R.I.B.A., on a large number of workhouse schemes, including the one at Wolverhampton.

Mr. Henry Montagu Mathews, C.I.E., M.I.C.E., died at his residence, Clayton, Surbiton Hill Park, on Wednesday in last week, at the age of eighty-three. He was appointed to the Indian Public Works Department in 1868, and served nearly thirty years in Burma. He was selected to examine and report on the lighthouses of the coast in 1878, and soon afterwards became engineer-in-chief and manager of the Rangoon and Irawadi Valley State Railway. The extension of the railway from Toungoo to Mandalay was his principal work there. He also acted as officiating chief engineer in the province and chairman of the Rangoon Port Trust. His son, Mr. H. M. S. Mathews, C.S.I., is Commissioner of Land Records in Burma.

Dr. Gabriel Gustafson, the distinguished Scandinavian archaeologist, died in Christiania on Saturday night. Born at Gotland, Sweden, in 1853, he went to Norway in 1889, and became Keeper of the Antiquarian Section of the Museum at Bergen. Dr. Gustafson was appointed in 1900 Professor of Archaeology at the University of Christiania, where he completely reorganised the archaeological and prehistoric museum and conducted numerous excavations. He made some important discoveries illustrating the civilisation of the Viking age. He designed the special Viking Section in the Christiania Museum.

An application for permission to prepare a town planning scheme for an area of 800 acres in the Beulah Hill district of Croydon was the subject of a Local Government Board inquiry on Tuesday. There was no opposition, except in the form of an intimation from the Ecclesiastical Commissioners that they did not wish 150 acres belonging to them to be included as they had already decided that its development should be on town-planning lines.

Our Illustrations.

THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION, SAN FRANCISCO.

We are enabled to give a selection of beautiful photographs of this undertaking, the large one of which represents the portal to the Palace of Varied Industries. Messrs. Bliss and Faville, who kindly sent us these views, are the architects of that great building. The picture above on the right-hand corner of our plate shows a detail of the main entrance to the Palace of Machinery. Of this Messrs. Ward and Blohme are the architects. The Palace of Education was designed by Messrs. Bliss and Faville, and the south doorway to that structure figures on the left top corner of our illustration. The lower picture, yet to be mentioned, is a view of an entrance to the Palace of Education forming part of the Court of Palms, of which Mr. George W. Kelham is the architect, as mentioned in the descriptive article by Mr. Faville, which we give else where on our first page.

MESSRS. WM. GOSSAGE AND SONS', LTD., NEW OFFICES, WIDNES, LANCs.

We illustrate the plan and two interior views of the additions to the office buildings just carried out at Widnes for Messrs. Wm. Gossage and Sons, Ltd. The new wing consists of a large, central general office

Rathbone-street and Mount-view, and to block out the view of the surrounding property with backs facing three sides of the site. The maximum amount of light and air is secured by large open spaces, while the recreation-ground is centralised, thus affording supervision from the living-rooms, the self-contained cottages also facing this play-place for the same reason. The keeper's house is set in a central position hard by the recreation-ground, for obvious reasons. The architects lay stress upon the advantage of enclosing the scheme within its own boundaries—except Mount View—providing private roads in preference to public streets for access. They widen Mount View to secure frontages for a tenement-block on either side. The small triangular plot of ground at the junction of Rathbone-street and Wellington-street is laid out for planting, as well as the spaces flanking the recreation-ground. Two shops, not included in this scheme, are suggested to be built at the angle formed by Upper Duke-street and Rathbone-street, as that parcel of land is not needed for the present purpose. The accommodation is apportioned in the following manner:—42 three-room tenements, providing for 252 persons; 42 two-room tenements gives accommodation for 168 individuals; and 10 self-contained dwellings for 80 more, making a total of 500. How this has been accomplished the plans will show. The sculleries

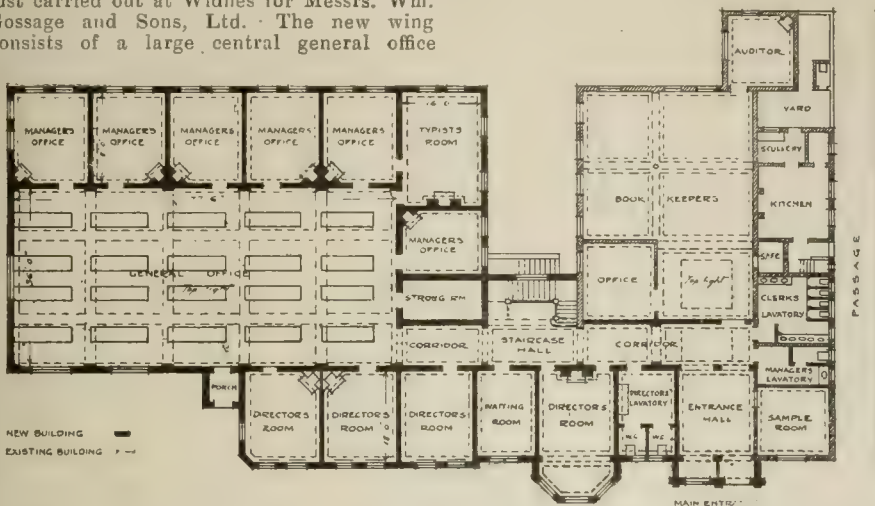
height and above cream-glazed facings. Granolithic floatings with channels to balconies. Entrances to staircases, grey vitreous terracotta. The roofs covered with Vellenhelli blue slates, and cottages and keeper's house with brindled Coalbrookdale tiles with water rib. The water supply and drainage has been well thought out as a prime part of the plan. The external treatment is suitable, and, though unpretentious, is pleasing, with picturesque variation consequent upon the grouping adopted.

NEW PREMISES IN REGENT-STREET.

The rebuilding of Nos. 288, 290, 292, Regent-street, and 16, Great Castle-street, is about to be carried out as shown by the accompanying elevations. The building is to be faced with Portland stone, and the roof covered with Westmoreland green slates. The illustration shows the whole block between Great Castle-street and Margaret-street, to the design of which the portions to be subsequently built will have to conform. The architect is Mr. C. T. Armstrong, A.R.I.B.A., of 32, Charing-cross, Whitehall, S.W.

NATIONAL COMPETITION PRIZE-MEDAL FIGURE-WORK.

The selection of figure subjects which we have made for the accompanying plan includes studies chosen by the examiners for the distinction of medal awards in the last National Competition, every one here represented having been submitted in a different class, and so is typical of a diversity such as always lends an interest to illustrations. They represent shaded drawing and oil-painting from the nude, as well as the application of the figure to modelling in relief as also in decorative painting; while both the subjects of the last-named classes are intended for framed panels. Otherwise they are quite unlike. This diversity permits of no comparison, and very little, consequently, is necessary by way of description, as each study tells its own tale. The drawings of full-length figures from life pleased the judges, Messrs. George Henry, A.R.A., John Byam Shaw, A.R.W.S., and S. J. Solomon, R.A., so much that they considered the general standard of work displayed considerable improvement. Mr. Frank D. Wray, of Wandsworth L.C.C. Clapham School of Art, was accorded a silver medal for a shaded drawing of a well-posed girl in the nude, and herewith reproduced. Miss Edith S. Bessell, of the same school, took a bronze medal for her oil-painting of a man playing upon a reed or flute, and she is to be congratulated for this seated study without draperies. Mr. J. Seymour Lucas, R.A., in conjunction with Mr. George Henry and Mr. S. J. Solomon, report in general terms that the average in this last class of work continues to be low in merit, and so much was this the case last time that neither gold nor silver medals could be awarded. A similar lack of approval characterises the report of the examiners chosen to judge modelling of the human figure; indeed, Messrs. W. R. Colton, A.R.A., Frederick W. Pomeroy, A.R.A., and Francis Derwent Wood, A.R.A., go so far in their report as to say that the modelling in the round from life was possibly a little lower than in the previous competition. The relief work, nevertheless, in their judgment ranked fairly high, some really excellent work of a useful kind being executed. We reviewed the exhibition at the time and singled out several works for special comment. The "Jeanne d'Arc" (1412-1431), so gracefully modelled by Mr. George E. Bradbury, of Lambeth School of Art, was among these, and the decorative panel of "Isabella," by Miss Frances E. Mathew, of Ipswich School of Art, likewise here illustrated, is well worthy of representation in the "Official Report" of the examiners just lately published by the Board of Education (3s.), with a great many similar typical reproductions like those which we have to-day borrowed, as we have done on several previous occasions, with the purpose of directing attention to the work done for the application of art to everyday requirements.



MESSRS. GOSSAGE AND SONS' NEW OFFICES, WIDNES, LANCs.
MESSRS. CHARLES W. HARRIS and LAURENCE HOBSON, A.A.R.I.B.A., Architects.

lighted from the roof. Around this room are grouped the various private offices of the directors and heads of departments, typists, strong-rooms, etc. The offices from the first floor are reached from a gallery which runs round the general office, as seen in the photograph. It is accessible from the central staircase placed between the new and old blocks of the buildings. The walls of the general office and the gallery are panelled in oak. The board-room, situated in the original building, has been formed by uniting several old rooms. The walls, panelling, and fireplace are carried out in figured walnut, the design being Jacobean in character. The work has been carried out from the designs and under the superintendence of Messrs. Charles W. Harris and Laurence Hobson, A.A.R.I.B.A., of Liverpool. We shall at an early date publish views of the staircase, hall, and a detail picture of the directors'-room fireplace, which is a capital piece of work well adapted for its purpose.

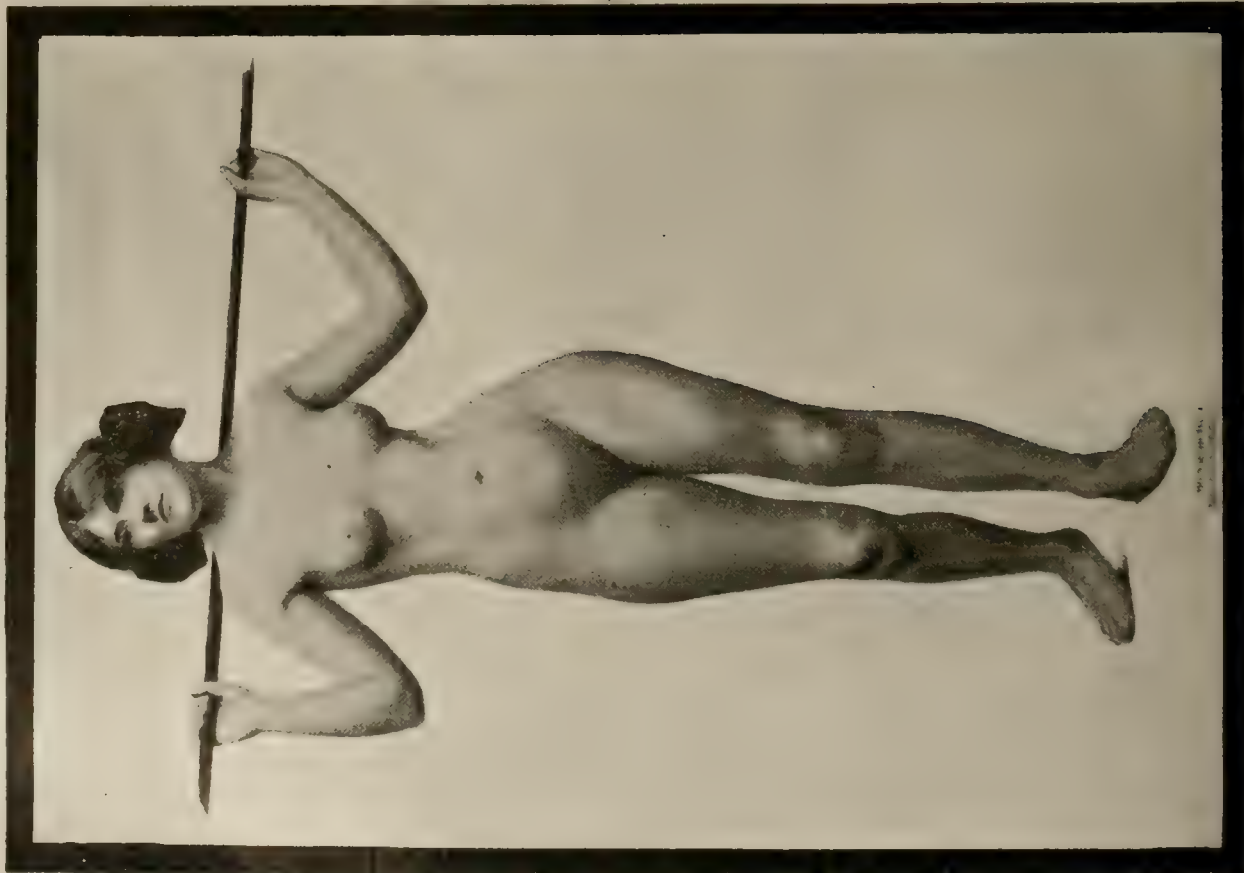
LIVERPOOL HOUSING SCHEME RATHBONE-STREET AREA.

SELECTED DESIGN.

The scheme, of which we give plans and a general perspective view, shows that Messrs. Biram and Fletcher, of St. Helens, the selected architects, planned their tenements on the balcony system in three-story blocks of four tenements on each floor, with one central staircase to each block. They laid out the different buildings on the site so as to provide the whole of the frontages to

are fitted with washing-boiler, bath, with hinged safety cover, and wash-up sink. The private yard has wrought-iron railing enclosure, and w.c. opening thence, the dust-hopper being set as far away as possible, with removal hopper at bottom of chute. This is carried up to above the top story for ventilation. The food-lockers all ventilate into the open air, with inlets and outlets to promote passage of air. The coal-cupboards are near entrances, for convenience of delivery. The construction is fire-resisting, and living-room and bedroom floors are covered with lin. white Riga t. and g. boards nailed to creosoted dove-tailed beams in concrete and coved with skirting to walls. Granolithic 1½ in. thick finished scullery floorings. Walls all plastered with coved or bull-nosed angles; red deal for joiner's work, and no dust-collecting mouldings. Windows solid-framed and fitted with opening casements arranged to be cleaned from inside where balconies and yards do not provide ready access. These particulars of the three-story blocks generally apply to the other dwellings. The materials of the existing buildings on the site to be reused so far as suitable, the bricks either broken up for concrete in the usual way or the sound bricks being utilised for internal wallings. Slates to be put on roofs of back premises. The new bricks to come from St. Helens works, grey generally, and red wire-cut bricks for dressing and base. Hard blue stone sills, thresholds, and steps. Non-slip treads to concrete steps, and walls to staircases faced in salt-glazed bricks to dado

SHADIED DRAWING OF A FIGURE FROM THE NUDE.



SILVER MEDAL (FOR TWO).

FRANK D. WRAY.
LONDON: WANDSWORTH, L.C.C. CLAPHAM SCHOOL OF ART.
OIL PAINTING OF A FIGURE FROM THE NUDE

MODELLED DESIGN FOR A MEMORIAL TABLET



SILVER MEDAL

GEORGE E. BRADBURY.
LONDON: L.C.C. SCHOOL OF ART.



BRONZE MEDAL.

LONDON: WANDSWORTH, L. G. C. CLAPHAM SCHOOL OF ART.

EDITH S. BESSILL.



BRONZE MEDAL.

FRANCES K. MATTHEW.

IPSWICH SCHOOL OF ART.

NATIONAL COMPETITION PRIZE MEDAL FIGURE-WORK.

Building Intelligence.

Craghead.—Mr. John G. Burrell, Licentiate R.I.B.A., of Durham, has prepared plans for the extensive alterations to the Craghead and Holmside Co-operative Society's stores at Craghead, in the county of Durham, and the contractor is Mr. T. Soulsby, of Pelton. The work consists in the erection of departments for drapery, millinery, boot and shoe, hardware, and a large store in the basement, as well as a butchering department, together with offices. The site is now occupied by old houses already being pulled down. A portion of the adjoining ground has been acquired upon which to erect two new managers' houses to replace those which are being removed. The building will be two stories high, and the assembly-room and committee-room are placed on the first floor, approached by a fireproof staircase, and a secondary, or escape, stair is arranged on the N.E. side of the hall. Isolating fireproof doors are provided to each department, and the whole of the shop-fittings will be of an up-to-date character, supplied by the Co-operative Wholesale Society. Loading docks are arranged for the different departments. The interior of all the shops will be cleaded and varnished throughout and the main piers of the shop fronts will be faced with green glazed bricks. The front elevations will be in stone, to harmonise with the existing grocery department. The building is to be heated throughout on the low-pressure hot-water system.

Cowdenbeath.—The new school which is to be erected at Barclay-street, Cowdenbeath, by Beath School Board, at an approximate cost of £10,000, is to be of one story, designed on the corridor system. It will consist of fifteen classrooms, giving accommodation for 750 pupils, with a drill-hall, entirely separate, measuring 50ft. by 26ft. Provision is being made for medical inspection and ablution-rooms. The buildings are to be of brick and lime, with stone dressings, and will be of a plain but substantial character. The architect is Mr. G. Charles Campbell, Methil.

A French process for electrolising timber is described by the "Contract Record" as speedy and economical. With lead-plate electrodes on each side, the timber is placed in a solution containing 10 per cent. of borax, 5 per cent. of resin, and a little soda. Application of the current expels the sap and fills the wood-cells with the borax and resin.

At a meeting of Dundee School Board held on Friday a communication was read from the Education Department asking if the Board had reconsidered the proposal to extend the Harris Academy, at a cost of £20,000, in the light of the circular issued by the Local Government Board suggesting the economising of capital and labour. It was unanimously agreed to delay proceeding with the proposed extension of the Harris and the erection of a new school at Bell-field-street until after the war.

The prizes won during the session by the pupils of the Edinburgh painters' and decorators' class, which is held in the Art College, were presented on Friday night by Mr. P. M. Stewart, secretary of the committee. Mr. Morley Fletcher, who presided, expressed appreciation of the work that was being done by the class, which, he said, was of a high standard. Twenty members of the class which had now been in existence for twenty-three years—had enlisted. The director's prize, which is the principal one, was won by William Campbell.

A work of restoration has been effected in connection with the chapel over the crypt on the south side of the Church of St. Mary Magdalene, Oxford, and in the ancient crypt itself. It is the intention to give the public an opportunity of inspecting the crypt, which dates from 1194, and contains a stone coffin with a cross on the cover, believed to be a relic of monastic times, and found hidden under the gravel. The windows have also been opened out. In the chapel above, four figures have been placed on the buttresses. The work of repair was designed and begun by the late Mr. H. Wilkinson Moore, F.R.I.B.A., of Oxford, as hon. architect.

COMPETITIONS.

Hyde.—New Council schools are to be erected in Greenfield-street, Hyde. The following is a list of the architects who sent in competition designs, with the awards made by the Borough Education Committee of Hyde, in accordance with the report of the assessor, Mr. Percy Worthington, M.A., F.R.I.B.A.: (1) Mr. F. Quentery Farmer, Stalybridge and Coventry, £50; (2) Mr. Chas. Adshead, Manchester, £30; (3) Messrs. Halliday, Peterson, and Agate, Manchester, £20; the other competitors being Messrs. J. H. Fletcher and H. A. Sisley, Hyde; Messrs. Woodhouse and Dean, Manchester; Mr. Joseph Holt, Manchester; Mr. Wm. Allan Dew, Hyde; Mr. J. Horner Hargreaves, Manchester; Messrs. Sankey and Cubbon, Manchester. The drawings were on view to the public at the Hyde Town Hall on Monday. The architect's estimated cost of the building placed first is £20,892. In accordance with the Conditions, the first premiated architect is to be appointed for the work, and to be paid in accordance with the schedule of charges of the Royal Institute of British Architects. Ten architects were invited to compete; but Messrs. Bradshaw, Gass, and Hope, of Bolton, asked leave to withdraw shortly before the date fixed, as their office staff had been much reduced owing to the war. A very good proviso appeared in the Conditions to the effect that the committee desired to avoid hampering competing architects as little as possible by directions as to the planning and designing of the buildings, and asked for directness and simplicity of plan, good grouping and massing, without undue elaboration of detail, and economy of maintenance and working. Future extensions, without spoiling the present building, had to be allowed for. No perspective was required. The elementary school is for 750 children, and a separate building for a special standard school for 400 pupils. All to be of one story, except two bedrooms and bathroom in the housewifery department, which may be on the first floor. The drawings were drawn to the scale of 16ft. to the inch. No sum was mentioned in the Conditions as to the cost of the buildings. There are four playgrounds—two to each school. Cross-ventilation was required by no mechanical system to be provided. The Board of Education requirements as to assembly-halls; etc., to be complied with.

Middlesbrough.—Mr. James Forbes, Licentiate R.I.B.A., of 43, Albert-road, Middlesbrough, has been placed first for the William Fallows Council school at Middlesbrough. Messrs. Kitching and Lee won the second position, and Mr. A. Forrester, also of the same town, was placed third. The buildings will cost just upon £20,000. Mr. J. W. Simpson, F.R.I.B.A., acted as assessor.

Whitehaven Housing Scheme Competition.—The Council of the Society of Architects have received a letter from the town clerk of Whitehaven, dated March 30, to the effect that the housing committee have decided to appoint a duly-qualified architect to act with the borough surveyor in adjudicating upon the designs sent in, and that they have also decided to extend the time to which designs will be received to May 10 next. Further, the housing committee intend to appoint the successful designer as the architect, unless there is some objection to this course. Under these circumstances, the Council of the Society have withdrawn their intimation to members relating to the negotiations between the Society and the promoters.

The Essex County Council have resolved to reconstruct the road between the Ilford and Romford urban boundaries at an estimated cost of £17,000.

The new secondary school in Exeter-road, Newton Abbot, was opened on Tuesday. It has cost £12,000, and accommodates 208 pupils. On either side of the assembly-hall are the boys' and girls' entrances, the principal's and senior mistress's rooms, and the boys' and girls' cloak-rooms. The classrooms are arranged along the length of the building, approached from a corridor, and at the rear are the various laboratories.

PROFESSIONAL AND TRADE SOCIETIES.

Bristol Society of Architects.—The sixty-fifth annual meeting of the Bristol Society of Architects was held on Monday in last week, at Messrs. Fort's, Royal Promenade, Clifton. The election of council and officers for the session 1915-16 resulted in the following members being elected:—President, Mr. Graham C. Awdry; vice-presidents, Messrs. G. H. Oatley and W. S. Skinner; council, Messrs. C. F. W. Denning, Mowbray A. Green, G. C. Lawrence, J. Foster Wood, B. Wakefield, and R. C. James; associate members of council, Messrs. E. G. Rodway and H. W. S. Wills; hon. secretary, Mr. A. B. Botterill. The annual report stated that, in spite of the European crisis, an excellent attendance at the meetings and a continued interest on the part of members in the proceedings of the society had been maintained. The council also noted with great gratification that at least 34 architects, formerly residing within the province of the Bristol Society of Architects, nine of whom are members of the society, are serving with H.M. forces. The society now numbered 35 Fellows, 23 Associates, and 13 Students, a total of 71. Mr. Wilfred L. Haile, the winner of the first prize in the recent students' measured drawings competition, was presented with a book prize to the value of £3 3s., and his drawings, which consisted of a reconstruction of the 18th-century reredos at Christ Church (City), a composition design of the Commercial-rooms, Corn-street, and of Park Hill House, were on view. On the proposition of Mr. G. H. Oatley, seconded by Mr. W. S. Skinner, a hearty vote of thanks was passed to the President, Mr. Graham C. Awdry, for the work he had accomplished for the society during the past year of office, and a similar vote was accorded to the retiring hon. secretary, Mr. C. F. W. Denning, for his three years' service.

Sheffield.—At the annual meeting of the Sheffield Society of Architects and Surveyors, on April 15, held at the University, under the chairmanship of Mr. A. F. Watson, the annual report, submitted by the secretary (Mr. James R. Wigfull), stated that the total membership of the society was 109, compared with 114 last year. The war had made a strong appeal to the patriotism of architects and surveyors, and no fewer than 41 principals or assistants from Sheffield and Rotherham offices were now serving with the colours. It was a very high percentage. Precautions had been taken to deal with any emergencies that might arise out of the war, either in regard to the interests of the profession or of individuals. The building trades generally had been very seriously affected. The shortage of labour, especially that of labourers, which was one of the greatest difficulties during the early days of the war, was not now so apparent. This was due in a large measure to the greatly reduced amount of work in progress. The accounts showed a balance in hand of over £61. Officers for the ensuing year were elected as follows:—President, Mr. A. F. Watson; vice-president, Mr. C. B. Flockton; treasurer, Mr. R. W. Fowler; hon. secretary, Mr. James R. Wigfull; committee, Messrs. W. G. Buck, F. E. P. Edwards, J. R. Hall, H. I. Potter, H. L. Paterson, C. S. Sandford, C. F. Innocent, J. Lancashire, and F. H. Wrench. Appreciation was expressed of the manner in which Councillor Arthur Neal had conducted the negotiations with the profession in respect of troubles arising out of the recent revision of by-laws. The expert attention he had given to the subject was, the president said, very much appreciated by the architects concerned.

The death is announced of Mr. John Alcorn, the late borough surveyor of Oban.

At the annual convention of the Royal Burghs of Scotland, held in the City Chambers, Edinburgh, it was unanimously resolved, after some discussion, to remit to the annual committee to take steps at the earliest opportunity to obtain an Act consolidating the whole enactments and provisions relating to the Housing of the Working Classes in Scotland.

THE BUILDING NEWS APRIL 23, 1915.





THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION, SAN FRANCISCO, CALIFORNIA.
THE PALACE OF VARIOUS INDUSTRIES, THE PALACE OF EDUCATION, THE COURT OF PALMS, AND THE PALACE OF MACHINERY.

MEYER, LEECH, CAVALLI, MESS, WARD, and BLOOMER, GEO. W. KITHAM, ARCHT.

THE BUILDING NEWS, APRIL 23, 1915.

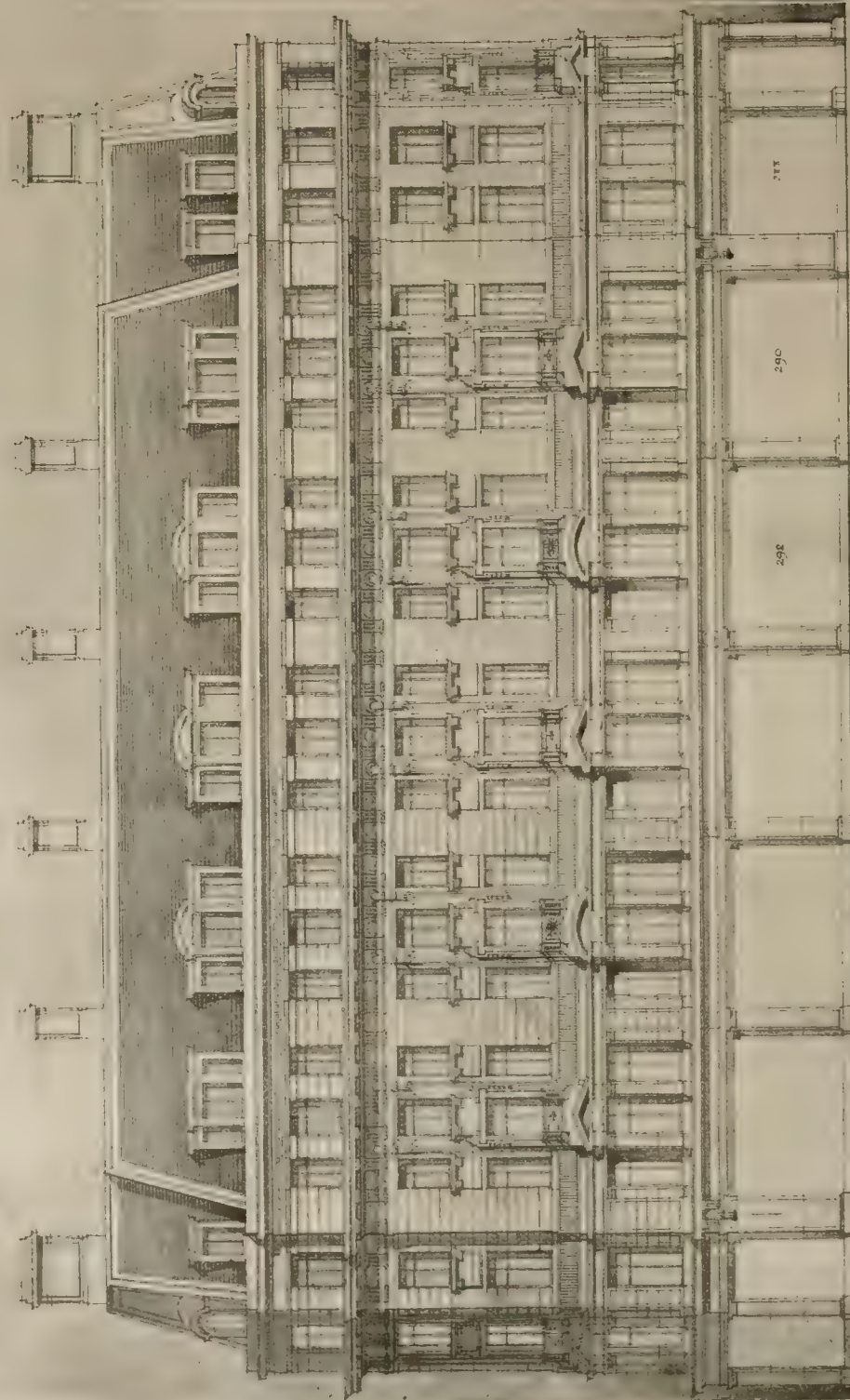




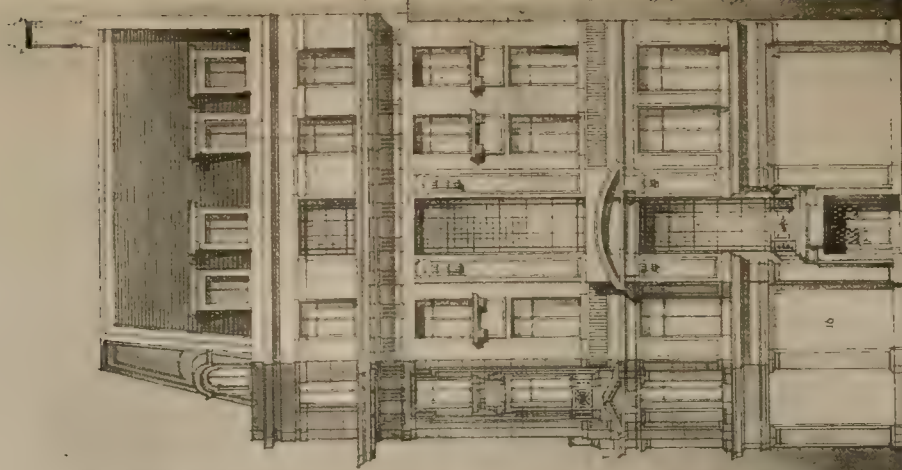
Howard Jones, Ltd., England

MESSRS. GOSSAGE AND SONS, LTD., NEW OFFICES, WIDNES, LANCs.: GENERAL OFFICE AND DIRECTORS' ROOM.

MEASRS. CHARLES W. HARRIS and LAURENCE HOLDSON, AA R.I.B.A., Architects.



ELEVATION TO REGENT STREET



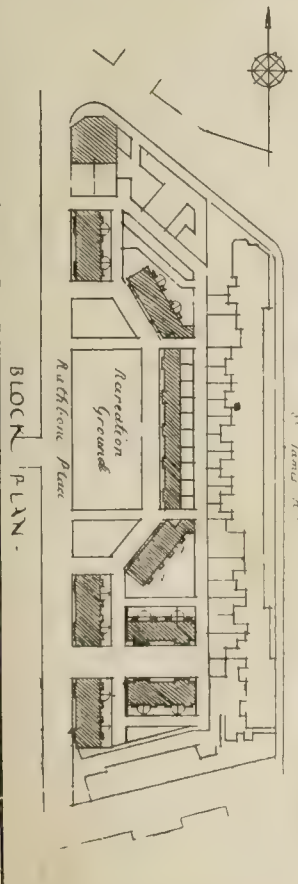
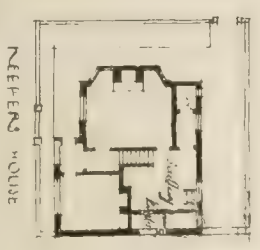
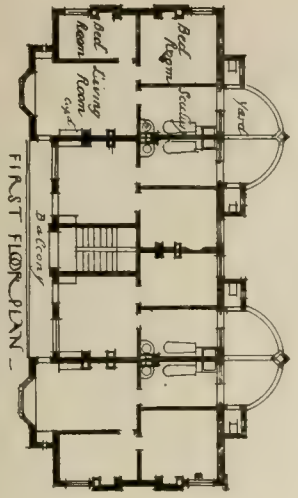
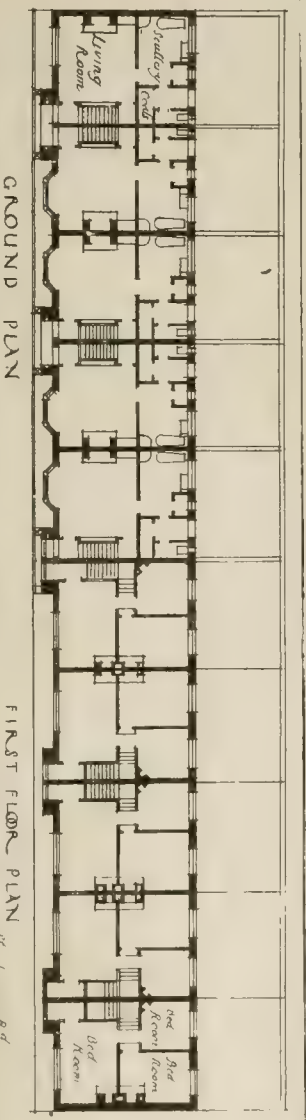
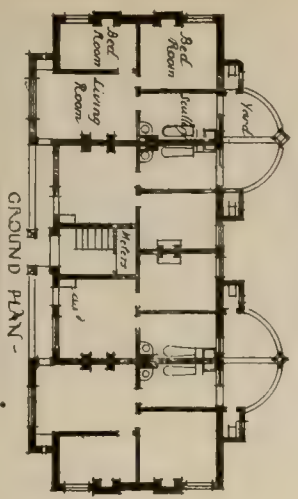
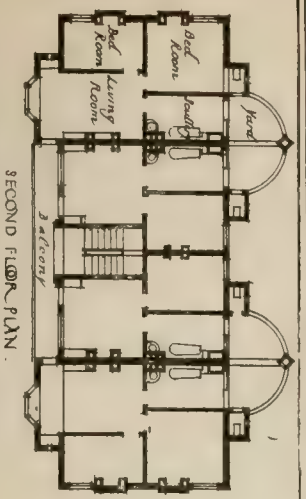
ELEVATION TO GREAT CASTLE ST.

NEW PREMISES, REGENT STREET, W. (from Margaret Street to Great Castle Street).

Mr. C. T. ARMSTRONG, A.R.I.B.A., Architect.

CITY OF LIVERPOOL: PROPOSED
HOUSING SCHEME RATHBONE ST. AREA

*Diram & Hellicker
Architects,
St. Helens*



SELECTED DESIGN.

Corrente Calamo.

The fourth discussion of the Meyer timber contract in the House of Commons was not pressed to a division yesterday week, after all. As on previous occasions, the subject was introduced by Mr. W. Young, Liberal Member for East Perthshire, who declared that the Office of Works, like the roof of Westminster Hall, was suffering from a species of dry-rot; that the officials of the Department had been stubborn, stupid, and pigheaded; and he called for a thorough cleansing of this modern Augean stable. Mr. Handel Booth, who renewed the criticisms made in his letter to Lord Emmott, caused some laughter by suggesting that the House ought to have some guidance in the matter from the Opposition Leader. Sir John Simon, the Attorney-General, who was put up to reply, made a skilful but not very convincing defence, its sum and substance being that the arrangement was the best possible at the time. Mr. Bonar Law, who hinted that when the war is over he would have a good deal to say about contracts, declared that the terms of the bargain made with Mr. Meyer would never have been approved by any business man, and that there should have been some limitation of the profits. He also expressed the strong opinion that a man who was obtaining commission on such a gigantic scale should not have been allowed to trade for himself. Sir Henry Dalziel declared that the Office of Works had been out-maneuvred at every point, and that if Lord Emmott, the First Commissioner, had any decency, he would resign. After four hours' debate Mr. Young withdrew his motion, so that Members were spared the painful ordeal of going to a division.

Our local authorities have now all sorts of statutory powers in regard to raising, or lowering, the levels of existing streets. In carrying out changes of this kind they do not always trouble to work amicably with the frontagers—i.e., the owners of the houses fronting a road whose level is being altered. The workmen employed by them, either directly or through a contractor, have to see the job through, and so this is often done rather roughly. When an accident happens to some passer-by on the highway, it is easy enough to launch a nice little litigation over the point as to who is to pay. Small people are naturally timid of suing a local authority, who nowadays is so frequently glorified as a mayor and corporation, and is protected with the barbed-wire fencing of notices of action, etc. Thus they are left to claim damages out of the owner of the premises fronting the cause of the accident. But, as a recent decision once more shows, these frontagers are not legally liable for the neglect of the road authority, over whose peculiar ways they, of course, have no control. A local council lately raised the level of a pavement, and, in so doing, they came upon the coal-shoot of a house fronting the road, which was fixed at the former level. Instead of arranging with the owner to alter this, and having to leave the shoot available, they just left out a flagstone in the paving, and so made a fine trap for passengers. The inevitable accident happened, and the person injured sued the frontager; but the High Court, confirming the County-court, held that he was in no sense liable for this nuisance upon the highway opposite his house, and which he had no power to remedy. Thus the

action failed; but the local authority should be made responsible for this negligence causing injury, if the complainant has any means or nerves left with which to make another shot for justice.

The expressions of sympathy with architects and surveyors who have lost their incomes through the war, at the conference of local authorities at the Westminster Palace Hotel on Tuesday, were sympathetic; but we fear little is likely to come of any employment of such "under competent control, on civic survey work, getting together statistics, and gathering information which could be placed on exhibition in graphic form for the purpose of aiding the local authorities in realising the problems they had to face." The truth is, that just now town-planning is rather delaying than expediting building, as several times lately pointed out in these pages—in Birmingham, and at Dunfermline, for instance. The heavy cost of road-making, apparently inseparable from most schemes, and the pedantic ideas of some authorities with regard to the utilisation of sites, are other obstacles. Professor Adshead quite rightly pointed out on Tuesday, that if there was anything more fatal to development, it was the stereotyping and standardising of buildings. While land could not be sterilised wholesale, he contended that if the authority exercised persuasion and showed a willingness to pay, the result would be good. He also very properly insisted on regarding the landowner as a business man of the North-country type. We endorse the last very wholesome reminder entirely. The trouble at present is that authorities are hindering building development by landowners, and ignoring their professional advisers by ignoring their co-operation in the preparation of schemes. Hence delays and mistakes, which add to cost, discourage the builder, and keep architects, surveyors, and builders idle.

In last Wednesday's issue of the "Illustrated Official Journal of Patents," a case of some interest to heating and ventilating engineers, tried in January and February last in the Scottish Court of Session before Lord Hunter, is fully reported. The complainers were the New Vacuum Heating Co., Ltd., of 13, New-street, Leicester; and the respondents Messrs. Steel and Wilson, 4, Washington-street, Glasgow. The complainers were the proprietors of a patent for steam heating systems of the class where a partial vacuum is maintained in the return pipe. In previous systems of that type an automatic thermostatic valve had been placed at the outlet of the radiator which opened when air (which was comparatively cool) collected therein, so that the air was sucked out. The patentees transferred the thermostatic valve to the inlet pipe, leaving communication free between the radiator and the return pipe, which was proved to secure a useful result. Their fifth claim was as follows:—"In a steam heating apparatus combining an automatic inlet-valve with an adjustable regulating valve for regulating the quantity of steam supplied to the heater substantially as hereinbefore described." The respondents installed on certain premises a steam heating system, in which on the inlet to each radiator there were a thermostatic valve and a hand-control valve in combination. Each radiator was provided with a hand-operated air-cock for the occasional

discharge of air. There was no valve at the outlet to the return pipe. This pipe was provided with a ram-pump for the discharge of the water of condensation. The system was designed to operate at a steam-pressure at the inlet of four or five pounds above atmospheric, but on some occasions the pressure at the inlet, while the system was working, had fallen to about two pounds, and that in the return pipe to slightly below atmospheric pressure. There was no evidence whether or not the pump could act as an air-pump. The judge held that there was subject-matter in placing the valve on the inlet instead of the outlet-pipe, as a new and useful result was thus attained; that though there would have been no subject-matter in placing on a pipe both a thermostatic and a regulating valve, the fifth claim was to be read as an appendant claim, and as such was good; but that, though the pressure in the respondents' apparatus might occasionally fall below atmospheric, the complainers had failed to prove that it had worked as a continuous vacuum system or infringing their patent. Interdict was refused.

There is, as we have more than once said lately, one thing the war has stopped for the time being, and that is speculative building of houses of from £30 to £45 rentals, a type of residence which till Mr. Lloyd George gave us our first knock-down blow, went up in thousands in every suburb of London and in many country places, and which were usually sold before they were dry. The design and finish of houses of this class are in most cases such a great advance on those of twenty or thirty years ago, that they are not to be compared with them. There are the porcelain enamelled baths in place of the old so-called enamelled ones that were only japanned, and took the first opportunity of showing the substructure of iron, that in its turn oxidised or rusted at the earliest period possible. Formerly they were encased and cradled in wood. It is much more sanitary to have a bath on its legs, but they do not often put a zinc or lead tray under the connections with outlet pipe; this ought to be done. The deep butler's sink in white porcelain or fireclay is a great improvement, and in many cases glazed tiled dadoes are put both in bathroom and scullery, and a tile floor in the latter. The w.c. pan and trap in one piece, is perhaps not so great an advantage as it seems, for some of the very best are seldom clear of paper, and the seats, unless very large, are hardly as safe-looking as the old ones, that mostly extended across the w.c. The water waste-preventing cisterns are certainly noisy nuisances. Of course, unenclosed, the seating is more sanitary, and there is certainly a saving on the whole cost as compared with that of a good valve w.c. with under-seat waste-valve and with zinc or lead tray and overflow-pipe; and, in the upper floors, a lead D trap.

The finish of the ceiling in geometrical patterns of plaster mouldings seems to be an expensive matter; but there is a large saving in eliminating the two or three enrichments that were once used, and the larger cornices and centre-flowers. Dadoes are formed in passage or hall and the dining-room, with moulding filled in with one or other of the raised-paper coverings, and painted, and friezes are formed by picture-mouldings. The stoves are in many cases much more expensive than they used to be.

Some are in one piece of fireclay or vitrified earthenware, with open fronts. The chimney-pieces are often of good modern designs; but they are less costly than the marble or enamelled slate ones used not so long ago, unless the builders put, as some do, ornamental overmantels of silvered plate-glass panels with bevelled edges. Front doors are in some cases of very handsome designs, and are to be bought ready made; and the overdoors that are put to the doors of the best rooms can also be bought ready made, and are not expensive.

The cost of materials is not the only obstacle in the way of the speculative builder just now; there is the great trouble of getting them. The large purchases of timber by the Government have depleted a market which was not very full when the war commenced, while the mines of the North Sea and the lively submarine stop the merchants from filling up the gaps in their stocks. Buildings will for some time suffer from the great want of timber dry enough to use, for the speculating builder does not keep a large stock drying, either in his yard or on the works, or in the docks. Lead is too dear to use much of it, and zinc follows suit, so cement fillets supplant it next walls, etc., while the pipes used will be of lighter weights and burst at the earliest attempt of the cold to reach, say, 25deg.—i.e., 7deg. of frost. There certainly ought to be a law to prevent the use of lead pipe of less thickness than that known as "stout"; then, if lead pipes are kept inside—or at least 2ft. under the surface of the ground—a burst pipe would seldom be heard of. Besides the increased cost comes the question of finding the money to build with, for the speculating builder nearly always has to get someone to finance him when the freeholder does not find the money. Building, consequently, is very much limited by the foregoing causes. There will be a dearth of new houses for a time, and some of the older houses will get an innings, for every hour someone is growing up, and growing into the want of a house. But the rebound presently is certain, and the boom will be the biggest on record—unless, of course, Mr. Lloyd George stops it by penalising the builder again!

According to Reuter's, the Manitoba Government has appointed Chief Justice Mathers, Sir Hugh John Macdonald, and Justice Daniel Macdonald to form a Royal Commission to investigate the charges that have been made to the Lieutenant-Governor by the Opposition in connection with the contracts for the new Parliament Buildings at Winnipeg. It is alleged that a sum of £160,000 was charged over the contract price.

Mr. C. J. Jenkin, the surveyor to the Finchley Urban District Council, has been granted leave of absence for six months to enable him to act as sanitary engineer to the Serbian Relief Fund.

A company of Engineers (Fortress) is to be formed for the Nuneaton, Atherstone, and Bedworth district, and the project is being taken up with great enthusiasm. With the consent of the town council, the War Office has approved the name of Mr. F. C. Cook, borough engineer, as commanding officer.

"While recognising the patriotic motives which have influenced Mr. E. B. B. Newton (the borough surveyor) in provisionally accepting nomination for a commission in the Royal Engineers (T.)," the Paddington Borough Council's works committee state that they are unable to release him at the present time.

Correspondence.

WHY MANY ARCHITECTS HAVE NO WORK.

To the Editor of the BUILDING NEWS.

SIR,—Reference is made in newspapers of this morning's issue to the serious lack of work for architects in various parts of the country, which is chiefly due to public works having been suddenly stopped by the Local Government Board. There is, however, a good deal of factory work in progress, and I fear manufacturers and engineers are taking advantage of this time of emergency to rush up buildings from very inadequate plans. If these are sufficient for carrying out the work, and no more is required by local authorities in the districts where such buildings are erected, possibly there is nothing to be said.

I happen to know, however, that engineers' plans are supposed in many cases to be sufficient for all purposes; great urgency is argued, and architects, who are accustomed to preparing plans as required by the local by-laws, with block plans drawn to proper scale showing the drainage, and so forth, remain unemployed. Some manufacturers are reasonable, and gladly furnish what is desired; but in other cases there is considerable difficulty in getting the usual and proper plans submitted. In most instances the necessary plans could be prepared in so short a time that no delay would arise through employing the right men to do this class of work.

It is a most disastrous time for architects, and I think professional bodies, and all who have power and influence, should point out to engineering firms the additional hardship to a profession which has been very seriously affected by the war. Engineers are now sufficiently busy in all branches, without making plans other than their usual working drawings for constructional steelwork.—I am, etc.,

THOMAS F. TICKNER, F.R.I.B.A.
(Surveyor to Coventry Rural District Council).

Coventry, April 21, 1915.

QUICK-DRYING CONCRETE USED BY THE GERMANS.

SIR,—Probably your correspondent, "Bello Flagrante," will be interested in the following:—

Two years or so ago I was approached by a German professor, who asked me to investigate and place on the market his powder, which accelerated the setting of Portland cement. I made several experiments with this powder, and also with a powder which I invented myself. I found that my powder did exactly the same work as the German powder.

To test the powders, I built a 4½ in. brick wall in cement with open joints. I then placed a hosepipe behind the wall and the water was turned on, so that it ran through the wall and spouted out of the other side. I then rendered with a 2 and 1 mixture of cement and sand, also with a 1 and 1 mixture of cement and sand, and then with neat cement. In all these mixtures the two powders were placed. I found that each mixture set so quickly that the water was stopped from running. When I finished rendering it was running down on the hosepipe side of the wall, but none was coming through the renderings.

I therefore did not pay the German for his patent rights, but I have not marketed my own invention, because I consider there is very little need for a quick-drying cement. It won't pay sufficient return for the energy required to sell it.—I am, etc.,

J. H. KERNER-GREENWOOD.
King's Lynn.

A Local Government Board inquiry has been held at Clacton-on-Sea respecting the council's application for sanction to a loan of £9,000 for the extension of the west sea-wall and promenade, the old timber wall having been damaged by recent storms.

PARLIAMENTARY NOTES.

THE RECONSTRUCTION OF REGENT-STREET QUADRANT.—Replying on Wednesday to Mr. Hinds, Sir H. Verney said: The Crown Surveyor is preparing amended designs for the completion of the rebuilding of the Quadrant, Regent-street. The views of the Crown tenants are well-known, and consideration is being given to all reasonable trading requirements.

THE TEMPORARY LAND VALUATION STAFF.—In a written reply to Mr. Chancellor, Mr. Lloyd George states that during the year ending March 31, 1916, upwards of 1,700 discharges from the temporary Land Valuation Staff fall to be made, and adds: There is, of course (and can be), no restriction upon the liberty of any member of the temporary staff to anticipate the date when his services will no longer be needed by the Board of Inland Revenue, and to enlist, if he so desires, in his Majesty's Forces; and the Board would not in such circumstances require in individual cases the full month's notice. The number of gentlemen formerly in the Valuation Office who have left the service of the Board by joining without permission his Majesty's Forces is 171, of whom all except one were at the time employed on a monthly basis; these gentlemen fall outside the scope of the Treasury Regulations, which apply only in cases where permission has been given. The Board, however, under the authority of the Treasury Regulations, have on their books the salaries of the members of the Valuation Office who have joined his Majesty's forces with the concurrence of the Board, which carries with it the prospect of re-engagement.

LEGAL INTELLIGENCE.

ESTATE AGENTS' CLAIM FOR COMMISSION.—Wallrock and Co. v. St. George's Hospital.—Mr. Justice Darling, sitting without a jury, disposed of this action on Friday. It was brought by Messrs. Samuel Wallrock and Co. against the authorities of St. George's Hospital to recover £15,000 commission for introducing Mr. Mallaby Deeley, M.P., as a prospective purchaser of the buildings and site for £525,000. Alternatively, plaintiffs claimed upon a quantum meruit, and a sum was agreed upon between the parties if the plaintiffs were entitled in law to succeed. The negotiations fell through owing to the inability of Mr. Mallaby Deeley to come to an agreement with the Duke of Westminster as to his rights over the estate. During the hearing the claim for commission was withdrawn. His Lordship found that there was no default on the part of the defendants which prevented the sale being completed, and entered judgment in favour of the defendants, with costs.

The new Ararat Baptist Chapel at Whitchurch, Salop, has been formally opened. Mr. W. Beddoe Rees, of Cardiff, was the architect, and Messrs. E. Turner and Sons, Cardiff, were the contractors. The cost was £3,000.

A public hall has been opened at Ardahan. It is built of squared masonry, with a roof of Carrick slates. The chief room is 63ft. by 31ft., and has seats for three hundred persons, and a stage. Mr. Wm. Scott was the architect, and the contract was carried out by Mr. Wm. Emerson, of Dominick-street, Galway.

Two new buildings will be erected shortly in the Hopkins group at Homewood, Maryland. One is the physical laboratory designed by Messrs. Wyatt and Nolting, architects, Keyser Building, Baltimore, and the chemical laboratory designed by Messrs. Carrere and Hastings, 225, 5th-avenue, New York. Each of these buildings will cost approximately 200,000dol.

The chairman of the Lancashire Asylums Board formally opened on Wednesday week the new asylum which has been erected at Whalley, in the Ribblesdale valley, at a cost of about £600,000. The asylum has been taken over, while still incomplete, by the War Office for use as a military hospital, and it is in the occupation of the Royal Army Medical Corps. There is accommodation for 2,000 patients. The hospital is at present known as the Duke of Lancaster's Royal Military Hospital.

The Bill designed to create a State Building Commission, and to employ a State architect at a salary of 5,000dol. a year, was defeated in the Washington State Senate on a motion to indefinitely postpone. It was argued that not only would it cost more to put the measure into effect and operate under its provisions than it would to continue with private architects as at present, but that the position of State architect would become a purely political job.

Our Office Table.

The Council of the Society of Architects, in response to an appeal for financial assistance from the committee of the Architects' Volunteer Training Corps, which now forms the 4th Battalion of the Central London Regiment (Volunteers), is sending the committee a donation of twenty-five guineas towards the preliminary expenses fund. Major E. C. P. Monson (T.D.), President of the Society, has been gazetted Sub-Commandant of the corps, and will be glad to hear from any members of the Society who are not eligible for H.M. Forces, and have not already joined any other Volunteer corps, with a view to their joining the Architects' Corps. Major Monson served for twenty-two years as an officer in the Territorial Force, retiring some eighteen months ago from the City of London Regiment, Royal Fusiliers, with the rank of major, which he had previously held for eight years. Major Monson has been honoured with the Territorial decoration, and has the Volunteer Long Service Medal and King Edward's Coronation Medal.

Notwithstanding the recent Treasury Minute and the circulars issued by the Local Government Board and the Board of Education, the London County Council is to be allowed to proceed with its building of new schools under what is known as the 40 and 48 scheme. This scheme represented a bargain between the Board of Education and the local education authority in London, whereby, over a period of fifteen years, the classes in the schools were to be steadily reduced in size until no class in an upper school would have more than forty pupils, and no class in an infants' school more than forty-eight. The Education Committee has been anxious to proceed with the scheme, under which a million pounds has already been spent, but the check on municipal borrowing seemed likely to put a stop to it. The Committee recently consented to a rigid paring down of the estimates on maintenance account, and the rate was reduced by a penny in the £. Owing, however, to the prohibition of the Treasury, the work of prospecting and putting in hand new schools was stopped. Representations were made to the Board of Education, with the result that the work is to go on.

The new by-laws made by the London County Council for the regulation of lamps, trade signs, or other structures overhanging the public way (otherwise than in the City of London) have been allowed by the Board of Trade, and will come into operation on Saturday in next week, May 1. It is provided that no lamp, or structure supporting or carrying the same, shall be fixed or retained so as to overhang the public way in such manner that any part of such lamp or structure respectively shall be at a less height than 8ft. clear above the surface of the footway, or be nearer to the carriageway than 2ft. 6in. from the outer edge of the kerb, or project more than 3ft. from the wall or shop front of the premises, or the support to which it is attached. Nor shall there be fitted or retained any lamp which, including framework and ornaments, exceeds 1ft. in any part when measured in any direction horizontally, or which, including framework and ornaments, exceeds 5ft. in height, or which weighs more than 94lb. No overhanging sign may be at a less height than 10ft. clear above the surface of the roadway, nearer than 2ft. 6in. to the carriageway, or project more than 4ft., and if any sign extend along the face of a wall or shop front for more than 2ft. it may not project more than 1ft.

Experiments at the Forest Service Laboratory of the Department of Agriculture have determined that the strength of a piece of wood may be seriously impaired by slight compression failures due to rough handling. Dropping a beam across a skid may cause compression failure at the point at which the beam strikes the skid, and it will be at this point that the beam

gives way when it breaks under a strain too severe for the weakened fibres to withstand. Hitherto unaccountable breakage in hickory waggon-spokes, and other presumably strong materials, are now attributed to compression failures caused by wind storms in the period of growth or by hard usage in lumbering and manufacturing processes. These compression failures show themselves in the form of little diagonal streaks or wrinkles across the grain, and are always a sure sign of weakness.

Among the several problems to be met with in the recent construction of the concrete reservoirs in San Francisco, Cal., was that of bonding asphalt to concrete. Mr. B. N. Abbott mentions that, after making unsuccessful attempts to apply the asphalt directly to the concrete in various ways, the expedient of first painting the surface with coal-tar was tried, and it was found that when applied in this way, under right conditions, the asphalt would adhere so firmly that after it had cooled it could not be broken away without bringing pieces of concrete with it. Mr. Abbott states that, in order to secure this result, the concrete surface was first scrubbed clean with a bristle brush, and over this a thin coating of hot coal-tar was "painted." The coal-tar should be heated in small quantities, brought just to the boiling-point, and then applied immediately. Heating the coal-tar in large quantities, which necessitated some delay before it could all be used, did not give such good results; and the gangs were therefore not allowed to heat more at a time than they could apply quickly as soon as it began to boil. The asphalt was spread over the tarred surface in the usual manner.

The new issue (January to July, 1915) of the "Key to the London Telephone Directory" is a little late; but that is not the fault of the publishers, Messrs. Stone and Colquhoun, 92, Victoria-street, S.W. It affords the only means of ascertaining the name and address of a subscriber on the 'phone when only the number and exchange are known, and we often find it most useful. The small cost—two shillings—saves pounds' worth of time, and the labour of compilation of the 131 pages must have been prodigious.

Stone screenings as fine aggregates for concrete are not favoured by the New York State Highway Department. As a result of some field tests of concrete, in which all the fine aggregate was stone screenings, it was decided that the only allowable use of such screenings should be in conjunction with a much larger percentage of sand. It was found that a proper proportion of screenings from a hard stone will improve a fine-grained sand; but the high cost of proper inspection and mixing makes the use of such a mixture prohibitive, except where a good sand is very expensive. Laboratory tests of screenings as aggregate showed up much better than the above field tests.

"Valuations," by Samuel Skrimshire, F.S.I. (London: E. and F. N. Spon, Ltd., 10s. 6d.), is a solid manual of some 450 pages, of valuations as applied to the sale and purchase of property, assessments to duties under the Finance Acts, the enfranchisement of copyhold estate, assessments for rating, compensation, or compulsory purchase, and valuations for advances for mortgages. A number of examples and the solutions are given in the appendices.

Japan is pushing railway construction in Chosen to some purpose, and, according to the annual report for 1912 by the Railway Bureau, the fine results are mostly due to the decrease in passenger and goods fares. The average working mileage was 802.9 miles in passenger traffic, and in goods traffic 797.3 miles, showing increases of nearly 60 per cent. in each. The aggregate passenger and traffic mileages were 165,034,551 and 100,282,500 miles respectively, showing considerable increases under each head. The receipts were, yen 3,545,225 from passengers, and yen 2,281,743 from freight, showing a total increase of yen 904,414. Station hotels have been opened at various points, and the equipment of the line

throughout is high-class, and is constantly being improved. The report, which includes a capital map of the province, is a full and very complete one.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY (To-morrow).—Institution of Municipal Engineers. Visit of the Southern and South-Eastern Districts to the New London County Hall, Belvedere-road, S.E.

Edinburgh Architectural Association. Visit to David's Tower, Edinburgh Castle. 2.30 p.m.

MONDAY.—Surveyors' Institution. Adjourned Discussion. "The Report of the Land Inquiry Committee on Housing." 8 p.m.

TUESDAY.—Builders' Clerks' Benevolent Institution 37th Annual Dinner, King's Hall, Holborn Restaurant. 6 for 6.30 p.m. Illuminating Engineering Society. Discussion on "Visibility: Its Practical Aspects," opened by C. C. Paterson and B. P. Duddings. Royal Society of Arts Hall. 8 p.m.

Architectural Association of Ireland. Annual Meeting. Valedictory Address by the President, H. Alberry, A.R.I.B.A., 15, South Frederick-lane, Dublin. 8 p.m.

WEDNESDAY.—Royal Society of Arts. "Utilisation of Solar Energy," by A. S. E. Ackermann, B.Sc. 8 p.m.

THURSDAY.—Junior Art Workers' Guild and Architectural Association. Combined Meeting. Papers on "The Independence of Architect and Craftsman," by H. M. Fletcher and Edward Spencer. 6, Queen-square, Bloomsbury. 8 p.m. Institution of Electrical Engineers. "The Bombay Hydro-Electric Scheme," by A. Dickinson. 8 p.m. Camera Club. "Amiens Cathedral," by Ernest Marriage. 8.30 p.m.

SATURDAY (May 1).—St. Paul's Ecclesiological Society. Visit to Chelsea Old Church, Crosby Hall, and Chelsea Hospital, under guidance of W. G. Nightingale. 2.30 p.m.

The North Wales counties asylum at Denbigh is being enlarged at a cost of £1,980.

A general strike in the building trade began in Christiania and throughout Norway on Monday morning.

The Post Office authorities have decided to build a new letter-sorting office at Mount Pleasant, Clerkenwell, at an estimated cost of £300,000.

Mr. J. Surfleet has been appointed highway surveyor for their northern district by the rural district council of Caistor-in-Lindsey, in succession to Mr. J. Preston, resigned.

The death occurred on Friday, at Hexham, of Mr. James Patterson, of Sunderland, the author of several works on antiquarian subjects, and also of a popular history of Sunderland. He took an active part in the formation of the Sunderland Antiquarian Society.

The Board of Trade reports that in the trades compulsorily insured against unemployment viz., building, works of construction, engineering, shipbuilding, and vehicle-making—the percentage of unemployment at April 9 was 1.40, as compared with 1.66 a month ago, and 3.51 a year ago. The rate of unemployment in these trades is thus less than half the rate of a year ago.

A block of twelve homes built in connection with the Durham County Aged Mineworkers' Homes Association, at Ebchester, was opened on Saturday. The cottages occupy a commanding site abutting the main road and overlooking the picturesque Derwent valley. The homes comprise two rooms apiece, with scullery, pantry, self-contained yard, and small gardens both back and front. The contractor was Mr. R. Southern, of Dipton, and the architect was Mr. G. J. Heron, engineer for the Consett Iron Co., Ltd., of Pont House, Leadgate.

At the meeting yesterday (Thursday) afternoon of the City of London Corporation an agreement was arrived at between that body and the governors of the Peabody Donation Fund for selling to the latter trustees 30,000 square feet of land on the south side of Summer-street, Southwark, for the erection thereon (from plans by Mr. Victor Williams, architect) of working-class dwellings to accommodate the persons to be displaced under the Corporation of London Bridges Act of 1911. At the same meeting a bequest by the late Mr. F. C. Pawle to the Guildhall Gallery of the late Frank Hill's painting, "The Lord gave, and the Lord hath taken away," was accepted with special thanks. It has been hung in the upper room of the Guildhall Art Gallery.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

	Per standard.	
Yellow Pine Deals, 1st quality...	£55 0 0 to £57 0 0	
" 2nd "	43 0 0 " 45 0 0	
White Deals: First	22 0 0 " 24 0 0	
" Seconds	20 0 0 " 22 0 0	
U.S. Yellow Planks, Deals, and Battens	10 10 0 " 14 10 0	
Oak: Austrian Wainscot	£40 10 6 to £40 12 6	
Teak: Burmese, per load, 50ft.	28 0 0 " 34 0 0	
Teak: Java, per load, 50ft.	24 0 0 " 27 0 0	

IRON.

	Per ton.	Per ton.
Roller Steel Joists, English	£9 5 0 to £9 7 6	
Wrought-Iron Girder Plates	9 10 0 " 10 0 0	
Steel Girder Plates	9 5 0 " 9 17 6	
Bar Iron, good Staffs	6 5 0 " 8 10 0	
Do., Lowmoor, Flat, Round, or Square	22 0 0 " 0 0 0	
Do., Welsh	5 15 0 " 5 17 0	
Boiler Plates, Iron—		
South Staffs	8 0 0 " 8 15 0	
Best Sneathill	9 0 0 " 9 10 0	
Angles 10s., Tees 30s. per ton extra.		
Builders' Hoop Iron, for bonding, &c., £8 15s. to £9.		
Ditto galvanised, £14 to £15 10s. per ton.		

	No. 18 to 20.	No. 22 to 24
Galvanised Corrugated Sheet Iron—		
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0 " £13 10 0	
Best ditto	13 10 0 " 14 0 0	

	Per ton.	Per ton.
Cast-Iron Columns	£6 17 6 to £8 10 0	
Cast-Iron Stanchions	6 17 6 " 8 10 0	
Roller-Iron Fencing Wire	8 5 0 " 8 10 0	
Roller-Steel Fencing Wire	7 5 0 " 7 10 0	
Galvanised	8 15 0 " 9 5 0	
Cast-Iron Sash Weights	5 15 0 " 6 0 0	
Cut Floor Brads	10 15 0 " —	
Corrugated Iron, 24 gauge	16 0 0 " —	
Galvanised Wire Strand, 7 ply.		
14 B.W.G.	14 5 0 " —	

	0 to 8	10	11	13	B.W.G.
B.B. Drawn Telegraph Wire, Galvanised—					
£10 10s. £10 15s. £11 0s. £11 5s. £11 15s. per ton.					

	Per ton.	Per ton.
Cast-Iron Socket Pipes—		
3in. diameter	£6 15 0 to £7 2 6	
4in. to 6in.	6 10 0 " 6 12 6	
7in. to 24in. (all sizes)	6 17 6 " 7 2 6	
[Coated with composition, 5s. Od. per ton extra.		
turned and bored joints 5s. per ton extra.]		

	Per ton.	Per ton.
Iron—		
Cold Blast, Lillieshall	60s. Od. to 127s. 6d.	
Hot Blast, ditto	87s. Od. " 97s. Od.	
Wrought-Iron Tubes and Fittings—Discount off		
Standard Lists f.o.b. (plus 2½ per cent.)—		
Gas-Tubes	72½ p.c.	
Water-Tubes	66½ " "	
Steam-Tubes	65 " "	
Galvanised Gas-Tubes	60 " "	
Galvanised Water-Tubes	56½ " "	
Galvanised Steam-Tubes	50 " "	

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	*£35 15 0 to —	
" Country	*£6 15 0 " —	
Lead Barrel Pipe, Town	*£6 15 0 " —	
" Country	*£7 15 0 " —	
Lead Pipe, Tinned inside, Town	*£7 15 0 " —	
" Country	*£8 15 0 " —	
Lead Pipe, Tinned inside and outside	*£30 5 0 " —	
" Country	*£31 5 0 " —	
Composition Gas-Pipe, Town	*£28 15 0 " —	
" Country	*£29 15 0 " —	
Lead Soil-pipe (up to 4in.) Town	*£28 15 0 " —	
" Country	*£29 15 0 " —	
[Over 4in. £1 per ton extra.]		
Lead, Common Brands	17 17 6 " £18 12 6	
Lead Shot, in 28lb. bags	24 15 0 " —	
Copper Sheets, sheathing & rods	94 0 0 " 94 10 0	
Copper, British Cake and Ingot	82 0 0 " 83 0 0	
Tin, English Ingots	172 0 0 " 174 0 0	
Do., Bars	173 0 0 " 176 0 0	
Pig Lead, in lowt. Pigs (Town)	20 2 6 " 21 2 6	
Sheet Lead, Town	*£25 5 0 " —	
" Country	*£26 5 0 " —	
Genuine White Lead	34 0 0 " —	
Refined Red Lead	32 0 0 " —	
Sheet Zinc	75 0 0 " —	
Old Lead, against account	19 15 0 " —	
Tin	9 10 0 " —	
Cut nails (per cwt. basis, ordinary brand)	0 13 3 " —	

* For 5 cwt. lots and upwards.

SLATES.

	in. in.	£ s. d.	per 1,000 of
Blue Portmadoc	20 × 10	13 12 6	1,200 at r. stn.
" 16 × 8	16 × 8	6 12 6	" "
Blue Bangor	20 × 10	13 2 6	" "
" 20 × 12	20 × 12	13 17 6	" "
First quality	20 × 10	13 0 0	" "
" 20 × 12	20 × 12	13 15 0	" "
" 16 × 8	16 × 8	7 5 0	" "
Eureka unfading green	20 × 10	15 17 6	" "
" 20 × 12	20 × 12	18 7 6	" "
" 18 × 10	18 × 10	13 5 0	" "
" 16 × 8	16 × 8	10 5 0	" "
Permanent Green	20 × 10	11 12 6	" "
" 20 × 12	20 × 12	9 12 6	" "
" 18 × 10	18 × 10	8 12 6	" "

BRICKS.

(All prices net.)

First Hard Stocks	£1 15 0	per 1,000	alongside, in
Second Hard Stocks	1 11 0	"	" (river.
Mild Stocks	1 9 0	"	" "
Picked Stocks for			delivered
Facings	2 5 0	"	at rly. stn.
Flettons	1 14 0	"	" "
Pressed Wire Cuts	1 18 0	"	" "
Red Wire Cuts	1 14 0	"	" "
Best Fareham Red	3 12 0	"	" "
Best Red Pressed			" "
Raubon Facing	5 0 0	"	" "
Best Blue Fressed			" "
Staffordshire	3 15 0	"	" "
Ditto Bullnose	4 0 0	"	" "
Best Stourbridge			" "
Firebricks	4 0 0	"	" "
2½in. Best Red Ac-			(Net, delivered in
cington Plastic	4 10 6	"	full truck loads
Facing Bricks			in London.
3½in. Accrington Best Red Plastic Facing per 1,000			
Bricks	£2 10 0		
3½in. ditto Second Best Plastic ditto	2 2 6		
Ditto Ordinary Secondary Bricks	1 11 3		
Ditto Plastic Engineering Bricks	1 17 6		
Sewer Arch Brick not more than 3½in. in			
thickest part	2 0 0		
3½in. Chimney Bricks fit for outside work	2 6 0		
3½in. ditto ditto through and through	2 0 0		
3½in. Beaded, Ovolo and Bevel Jambes; Octa-			
gons; 2½ and ¾ radius Bullnoses; Stock			
patterns	3 7 6		
Accrington Air Bricks, 9" × 2 course deep, each	0 0 6		
Ditto ditto 9" × 1 course	0 0 3		

Accrington Camber Arches:—		
3 course deep, 4½" soffit, per foot opening...	0 1 3	
4 ditto 4½" ditto ditto ditto	0 1 8	
5 ditto 4½" ditto ditto ditto	0 2 1	
6 ditto 4½" ditto ditto ditto	0 2 6	
3 ditto 9" ditto ditto ditto	0 2 1	
4 ditto 9" ditto ditto ditto	0 2 11	
5 ditto 9" ditto ditto ditto	0 3 6	
6 ditto 9" ditto ditto ditto	0 4 6	
Net free on rail, or free on boat at works.		

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

	White, Ivory, and	Best.	Buff, Cream, Other	Second
	Salt Glazed.	Best.	Second.	Colours.
Stretchers—				
£12 7 6 £10 17 6 £13 17 6 £17 17 6 £12 7 6				
Headers—				
11 17 6 10 7 6 13 7 6 17 7 6 11 17 6				
Quoins, Bullnose, and 4½in. Flats—				
15 17 6 14 17 6 17 17 6 21 7 6 15 17 6				
Double Stretchers—				
17 17 6 16 7 6 20 17 6 24 7 6 17 17 6				
Double Headers—				
14 17 6 13 7 6 17 17 6 21 7 6 14 17 6				
One side and two ends, square—				
18 17 6 17 17 6 21 17 6 26 7 6 18 17 6				
Two sides and one end, square—				
19 17 6 18 7 6 22 17 6 26 17 6 19 17 6				
Splays and Squints—				
17 7 6 15 7 6 21 17 6 24 7 6 17 7 6				
Plinth and Hollow Bricks, Stretchers and Headers—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Double Bullnose, Round Ends, Bullnose Stops—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Rounded Internal Angles—				
4d. each 3d. each 5d. each 5d. each 4d. each				

MOULDED BRICKS.

Stretchers and Headers—				
8d. each 8d. each 8d. each 8d. each 8d. each				
Internal and External Angles—				
1/2 each 1/2 each 1/2 each 1/2 each 1/2 each				
Sill Bullnose, Stretchers, and Headers—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Majolica or Soft Glazed Stretchers and				
Headers	£23 17 6			
" Quoins and Bullnose	27 17 6			
Compass bricks, circular and arch bricks				
of single radius 26 per 1,000 over above				
list for their respective kinds and colours				
Camber arch bricks, any kind or colour,				
1s. 2d. each				
Stretchers cut for Closers and Nicked Double				
Headers, £1 per 1,000 extra.				
* These prices are carriage paid in full truck loads				
to London Stations.				
Thames Sand	7 6	per yard, delivered		
Pit Sand	7 0	" "		
Thames Ballast	6 0	" "		
Best Portland Cement	36 0	to 41 0 delivered		
Ground Blue Lias Lime	21 0	per ton delivered		

Exclusive of charge for sacks.

	s. d.	s. d.	Per yard.
Grey Stone Lime	13 6	to 14 0	delivered
Stourbridge Fireclay in sacks 27s. Od. per ton at			railway station.

STONE.*

Red Mansfield, in blocks	per foot cube	£0 2 4
Darley Dale, ditto	" "	0 2 3
Red Corsehill, ditto	" "	0 2 2
Clooseburn Red Freestone, ditto	" "	0 2 0
Ancaster, ditto	" "	0 1 10
Greenshill, ditto	" "	0 1 10
Beer, ditto	" "	0 1 6
Chilmark, ditto (in truck at		
Nine Elms)	" "	0 1 10½
Hard York, ditto	" "	0 2 0
Do. do. 6in. sawn both sides,		
landings, random sizes	per foot sup.	0 2 8
Do. do. 3in. slab sawn two		
sides, random sizes	" "	0 1 3

* All F.O.B. London.

Bath Stone, delivered on road	£ s. d.	
waggons, Paddington Depot per foot cube	0 1 7½	
Ditto, ditto, Nine Elms Depot	0 1 9½	
Beer Stone, delivered on rail	"	
at Seaton Station	0 1 1	
Ditto, delivered at Nine Elms	"	
Station	0 1 7½	
Portland Stone, in random blocks of 20ft. average:—		
Delivered on road waggons	Brown	White
at Paddington Depot,	White Bed.	Base Bed.
Nine Elms Depot, or	Per foot cube.	
Pimlico Wharf	£0 2 3	£0 2 4½

TILES.

	s. d.	Divrd. at
Plain red roofing tiles	42 0	per 1000 ry. sn.
Hip and Valley tiles	3 7	per doz.
Broseley tiles	50 0	per 1000
Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz.
Raubon red, brown, or brindled		
ditto (Edwards)	57 6	per 1000
Ornamental ditto	60 0	" "
Hip tiles	4 0	per doz.
Valley tiles	3 0	" "
Selected " Perfecta " roofing		
tiles: Plain tiles (Peake's)	46 0	per 1000
Ornamental ditto	48 6	" "
Hip tiles	3 10½	per doz.
Valley tiles	3 4½	" "
" Rosemary " brand plain tiles	48 0	per 1000
Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz.
Valley tiles	3 8	" "
Staffordshire (Hanley) Reds or		
brindled tiles	42 6	per 1000
Hand-made sand-faced	45 0	" "
Hip tiles	4 0	per doz.
Valley tiles	3 6	" "
Hartshill " brand plain tiles,		
sand-faced	45 0	per 1000
Pressed	42 6	" "
Ornamental ditto	47 6	" "
Hip tiles	4 0	per doz.
Valley tiles	3 6	" "

OILS.

Rapeseed, English pale, per tun	£28 15 0	to £29 5 0
Ditto, brown	26 15 0	" 27 5 0
Cottonseed, refined	29 0 0	" 30 0 0
Olive, Spanish	39 10 0	" 40 0 0
Seal, pale	21 0 0	" 21 10 0
Cocoonut, Coochin	46 0 0	" 46 10 0
Ditto, Ceylon	42 10 0	" 43 0 0
Ditto, Mauritius	42 10 0	" 43 0 0
Palm, Lagos	32 5 0	" 33 5 0
Ditto, Nut Kernel	35 0 0	" 35 10 0
Oleine	17 5 0	" 19 5 0
Sperm	30 0 0	" 31 0 0
Lubricating, U.S.	0 7 6½	" 0 8 0
Petroleum, refined	0 0 6½	" 0 0 6
Tar, Stockholm	1 6 0	" 1 10 0
Ditto, Archangel	0 19 6	" 1 0 0
Linseed Oil	0 3 5	" —
Baltic Oil	0 3 4	" —
Turpentine	0 3 4	" —
Putty Genuine Linseed		
Oil	per cwt.	0 10 0
Pure Linseed Oil		
"Stority" Brand	0 9 0	" —

GLASS (IN CRATES).

English Sheet Glass: 15oz.	21oz.	26oz.	32oz.
Fourths	5d.	5½d.	6½d.
Thirds	6d.	6½d.	7d.
Fluted Sheet	5d.	6d.	—
Hartley's English Rolled	3in.	3½in.	4in.
Plate	3½d.	3½d.	4½d.

Figured Rolled and Repoussé

VARNISHES, &c. Per gallon.

Fine Pale Oak Varnish	£0 8 0
Fine Copal Oak	0 10 6
Superfine Pale Elastic Oil	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches.....	0 14 6
Fine Elastic Carriage	0 12 9
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Fine French Oil	0 1 0
Eggshell Flattening Varnish	1 4 9
White Copal Enamel	0 13 0
Extra Pale Maple	0 10 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 6

TRADE NOTES.

Boyle's latest patent "Air pump" ventilators have been applied to Portsmouth Workhouse.

On the flat roofs for the factories of a large glass-manufacturer at Rotherham the architect specified a waterproofed concrete as a finishing coat. We understand that the work is very satisfactory. The makers of the waterproofing powder Pudlo, which was used for this work, state that some very important contracts are being roofed with waterproofed concrete.

Mr. J. Ryan, Pembroke, Co. Dublin, has been appointed county surveyor by the Queen's County Council.

The death is announced of Mr. Robert Kelland, highway surveyor to the South Molton Rural District Council.

Kinghorn Town Council have appointed Mr. Arthur G. Webster, of Kirkcaldy, as sanitary inspector and burgh surveyor.

At a vestry meeting held at St. Paul's, Southampton, on Wednesday, plans by Mr. Geoffrey Webb, of London, for proposed alterations to the chancel of the parish church were submitted and approved.

At Bolton, on Wednesday, Mr. H. Shelford Bidwell held a Local Government Board inquiry into an application by the corporation for sanction to borrow £45,032 for purposes of the electricity undertaking.

Professor Havard Thomas's bronze statue "Thyriss" which was acquired for the Johannesburg Art Gallery, has been lent to the Tate Gallery, and will be exhibited in Gallery No. XVI. at Millbank for several months.

The death occurred at Harrogate on Tuesday of Mr. William Pearson, J.P., head of the firm of W. Pearson and Co., timber importers, of Hartlepool, and four times mayor of that borough. The deceased was born at Newton Bewley in 1847.

Mr. Edwin H. Back died on Sunday while on a visit to a daughter at Chelsea. Deceased, who had been in ill-health for a long time, was formerly the borough surveyor of Dartmouth, and was for some time a member of the corporation of that town.

The Belgian Government has lent to the Manchester City Art Gallery Meunier's bronze group representing a woman standing over the dead body of a miner, and known as "Le Grison," or "Fire-damp." It was hung in the long gallery yesterday (Thursday).

Considerable damage was done on Wednesday to the library of the Newcastle-on-Tyne Society of Antiquaries by a fire. The flames were discovered by the warden in the museum library in the Old Castle, where the antiquaries have their headquarters. Many valuable books were destroyed.

The urban district council of Hendon have received from the Local Government Board sanction to borrow £27,750 for main-road works from Bell-lane to Edgeware-road. Plans and estimates have been prepared and forwarded to the Local Government Board for the Finchley-road widening scheme, estimated to cost £4,019, and for private street-improvements amounting to £19,042.

The Gloucestershire County Council, at their meeting on Monday, authorised the committee of visitors to the asylum at Gloucester to proceed with the preparation of a scheme for providing a new epileptic block for the accommodation of sixty male patients and the necessary staff at an estimated cost of £10,000. It is not expected that building operations will commence before the summer of next year.

The Hamilton School Board opened on Friday a new section for the teaching of art and domestic science in connection with Woodside School, Hamilton. The building, which has cost £1,800, consists of an art-room, and rooms for instruction in cookery, laundry, and household management, all planned by Mr. Gavin Pater son, architect, Hamilton.

Mr. John Tweedy, of River View, Runhead, Ryton, builder and contractor, died on Tuesday, after a lingering illness, at the age of 73 years. A native of Gosforth, Mr. Tweedy removed to Medomsley, where he acted as clerk of the works under the Consett Iron Company. Forty years ago he went to Ryton, and commenced business as a builder and contractor, which rapidly developed. Mr. Tweedy was a member of the Ryton Council for about ten years, and held office until three years ago. He leaves a widow and family of seven sons and three daughters.

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120, Bunhill Row, London, E.C.

TENDERS.

. Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ABERDARE.—For the following, for the Aberdare Urban District Council—viz.: (Section A) construction, supply, and erection of motor-generators or converters; (B) construction, supply, erection, and connecting up of one high-tension switchboard and low-tension panels, and the supply of one high-tension feeder pillar:—

Bruce, Peebles, & Co. (accepted) £3,230 0 0

ANNAN.—For hospital extension, for the Annan District Committee. Accepted tenders:—

Mason:—

Mildowie, G., Annan ... £481 0 0

Joiner:—

Irvine, J. S., Annan ... 264 3 3

Plumbers:—

Drummond, P., & Son, Dumfries ... 230 14 2

Plasterer:—

Thomson, W., Annan ... 85 16 9

Slater:—

Richardson, J., ... 51 1 6

BETHNAL GREEN, N.E.—For installing a low-pressure hot-water heating apparatus at the Cranbrook-road school, for the London County Council:—

Brightside Foundry & Engineering Co., Ltd., 28, Victoria-st. ... £1,053 0 0

Christie, J. C., Aldgate ... 1,018 0 0

Cannon and Hefford, Peckham ... 968 0 0

Cannon, W. G., and Sons, Ltd., London-road ... 926 0 0

Yettin & Brockett, Ltd., Munton-road ... 925 0 0

May, J. & F., 33, Whitestone Park ... 893 0 0

Palowkar and Sons, Queen-st.* ... 848 0 0

Architect's estimate, £920.

* Recommended for acceptance.

BRADFORD.—For supply of the following materials, for the corporation. Accepted tenders:—

Steel Tires (200):—

Brown, J., and Co., Ltd. ... £437 0 0

Iron Castings:—

Summersell, H.

Wiring the east ward branch library:—

Collin & Bros. ... 126 0 0

Cable extensions at Technical College:—

Smith and Croft ... 80 0 0

BURY, LANC.—For the conversion of the carriage-shed at Bury (E.L.) into a carriage-repair shop, for the Lancashire and Yorkshire Railway:—

Tate and Gordon, Ltd., Manchester (accepted).

CANNOCK.—For completing certain contracts, for the urban district council. Accepted tenders:—

Kerbing and channelling:—

Atkins, A., Hammerwich ... £925 14 0

Sewerage works:—

Thorp, W., Birmingham ... 168 16 0

Private street works:—

Thorp, W., Birmingham ... 75 5 6

CHELTEMHAM.—For supply of new fittings at the municipal offices, for the Corporation:—

Billings, A. C., and Sons, Ltd. ... £477 0 0

(Accepted.)

DEWSBURY.—For supply of a mile of cable, for the electricity and tramways committee:—

Mackintosh Cable Co. (accepted) £164 0 0

ELGIN.—For new buildings at the corner of High-street and Lossie Wynd, for Mr. R. Aitkin. Mr. J. Wittet, Elgin, architect. Accepted tenders:—

Masons:—Davidson and Hay.

Carpenters:—Mackie and McKenzie.

Slaters:—Bain, G., and Son.

Plumber:—Clarke, J. H.

Plasterers:—Brodie, J., and Son.

Painters:—Kintrae, J., and Son.

(All of Elgin.)

GALWAY.—For the erection of a dispensary and medical officer's residence, for the board of guardians. Mr. H. MacDonald, St. Francis-street, Galway, architect:—

Richardson and O'Connor, Mog-cullen* ... £850 0 0

Simon, J., and Fahey, P., ... 799 8 8

* Recommended for acceptance.

HAMMERWICH.—For the execution of sewerage works at Watling-street, Hammerwich, for the Lichfield Rural District Council:—

Child and Withers (accepted) ... £2,124 0 0

HARRINGTON.—For erection of retort-house and installation of retort-benches, for the urban district council. Accepted tenders:—

Benches:—

Standard Furnace Setting Co., Halifax ... £300 0 0

Retort-house:—

Little and Sons, Harrington ... 265 0 0

HEBBURN.—For laying a sewer from Dunhope-street to South Back Hedgeley-road, for the urban district council:—

Henderson, Gosforth (accepted) £782 10 0

HOLBORN, W.C.—For painting the baths and wash-houses, for the Holborn Borough Council:—

Norris and Son ... £237 0 0

(Recommended for acceptance.)

HOLBEACH.—For erection of a pair of cottages on Greenfield Farm, near Saracen's Head, Boston-road, Holbeach, for Mr. W. Waite. Mr. F. B. Ward, M.S.A., 8, South Brink, Wisbech, Holbeach, and 19, Sheep Market, Spalding, architect:—

Darby, J. W., Boston ... £470 0 0

Emery and Co., Birmingham ... 151 6 8

Bateman, J. R., and Son, Lincs. ... 150 0 0

Parsons, J., and Son, Lincs.* ... 395 0 0

* Accepted.

HYTHE.—For erection of a smallpox hospital at Scenewood, for the town council:—

Harrison, J., Camberwell ... £536 0 0

(Accepted.)

INCE.—For the construction of sewers, drains, manholes, and workman's cottage, for the urban district council. Mr. A. T. Swain, engineer and surveyor:—

Bentley, J., Bradford ... £13,550 0 0

Bickerstaff, W. J., Wigan ... 13,072 0 0

Buckley, H. E., Bradford ... 13,000 0 0

Smith Bros., Burnley ... 12,734 0 0

Binns, F. E., Goole ... 12,611 0 0

Jowitt, W., Prescot ... 11,074 0 0

Bentley and Jubb, Wigan ... 10,664 0 0

Clegg Bros., Burnley ... 10,575 0 0

Cowburn and Sons, Hindley ... 10,555 0 0

Houghton, J. and H., Wigan ... 10,461 0 0

Webster & Winstanley, Wigan* ... 10,283 0 0

Horrocks, J., Westthroughton ... 10,164 0 0

* Accepted.

KEIGHLEY.—For supply of furniture, to the institute, for the education committee. Tenders recommended for acceptance:—

Benches and work in the Manual Training Department:—

Greenhow and Murgatroyd ... £60 3 5

Platform in the new assembly hall:—

Greenhow and Murgatroyd ... 10 5 0

Wood Block Flooring:—

Yeates, T. K., and Co., Leeds ... 102 18 0

Hand Lift:—

Middleton, R., Leeds ... 50 0 0

KIRKFOUR.—For improvements to the Kirkfour Plaistow Council School, for the West Sussex Education Committee:—

Ockenden and Son, Crawley ... £696 0 0

(Accepted in place of A. Crane, withdrawn.)

LEVERINGTON.—For the erection of a warehouse at Horseshoe Mills, Leverington, Wisbech, for Messrs. Smedley and Co. Mr. F. Burdett Ward, M.S.A., 8, South Brink, Wisbech, architect:—

Johnson, H. H., & Son, Wisbech ... £765 0 0

Shanks, R., Cambs ... 760 0 0

Nelson and Register, Wisbech ... 741 18 0

Wilkinson and Co., Wisbech ... 700 0 0

Rands, H., and Son, Wisbech* ... 675 0 0

* Accepted.

LONDON, E.—For supply of laundry machinery, for the Bethnal Green Guardians:—

Lane (accepted) ... £156 10 0

MANCHESTER.—For repairing and part resheeting a gasholder for the gas committee:—

Walker, C. and W., Ltd., Donnington, Salop (Accepted).

MANCHESTER.—For supply of six superheaters at Stuart-street Station, for the electricity committee:—

Heenan and Froude, Ltd., Worcester (accepted).

MONMOUTH.—For an extension of the eastern outfall sewer, for the town council:—

Anderson, A., Monmouth ... £164 4 10

(Accepted.)

OYSTERMOUTH.—For the erection of a new nave and chancel at All Saints Church. Mr. L. W. Barnard, 31, Promenade, Cheltenham, architect:—

Walters, E., and Son ... £14,742 0 0

Cowlin, W., and Sons ... 13,548 0 0

Morris, J. G. ... 10,670 0 0

Lloyd Bros. ... 10,476 0 0

Bloxham, W. J. ... 10,297 0 0

Pittard, H., and Son ... 10,049 0 0

Weaver, J. and F. ... 10,050 0 0

Bennett Bros. ... 9,633 0 0

Franklyn, Ltd. ... 9,250 0 0

Collins and Godfrey ... 8,976 0 0

Thompson, J., and Co., Peterborough (accepted) ... 8,880 0 0

Long, J., and Sons ... 8,888 0 0

READING.—For the construction of convenience for women in St. Mary's Butts, for the corporation:—

Tucker, G. H. (accepted) ... £438 10 0

READING.—For supply of sludge-pressing plant, for the town council:—

Manlove, Alliott, and Co., Ltd. £2,802 0 0

(Accepted.)

RHYMNEY.—For improvements from Penywain to Carno-street, for the town council:—

Williams, W., and Sons, New Tredegar (accepted) ... £155 0 0

ROTHERHAM.—For supply of two water-tube boilers, for the corporation:—

British Niclausse Co. ... £8,400 0 0

(Recommended for acceptance.)

ROTHERHAM.—For supply of steel and rolled steel joists, for the corporation. Accepted tenders:—

Roller Steel Joists:—

Allott Bros. and Leigh ... £311 0 0

Reinforced steel, per ton:—

Whitehead Iron & Steel Co., Ltd. ... 8 10 0

ROTHERHAM.—For supply of a concrete mixer, for the corporation:—

Ransome verMeer Machinery Co., Ltd. (accepted) ... £216 10 0

SHEFFIELD.—For diverting a groyt in connection with the widening of Exchange-street, for the corporation:—

Wellerman Bros. (accepted) ... £1,660 0 0

(Continued on page 414.)

LIST OF COMPETITIONS OPEN.

May 29—County Offices, Dundalk (Prof. William A. Scott, A.R.I.B.A. Assessor, Irish Architects only).....	C. McAlester, County Sec., Court House, Dundalk.
June 7—Municipal Buildings, Stepney (Mr. Henry T. Hare, F.R.I.B.A., Assessor).....	G. W. Clare, Town Clerk, 15, Great Alley-st. Whitechapel, E.
No date—Small Hospital, Galesmire.....	E. B. Crossdell, Clerk, Union Hall, Whitehaven.
do. —Designs for Cottages, Bromborough Estate. Architects in Practice only. Cost not more than £1,000 per group of Five, and £1,400 per group of seven. (Mr. Geoffry Lucas, F.R.I.B.A., Assessor).....	Nine premiums of 2½ p.c. per group Lever Brothers, Ltd., Port Sunlight, Cheshire.

LIST OF TENDERS OPEN.

BUILDINGS.

April 24—House, S. Winnow, Lostwithiel.....	J. T. Strout	F. C. Jury and Sons, Archts., St. Austell, Cornwall.
" 24—Houses 25, Lowca.....	Workington Iron & Steel Co., Ltd.	C. W. Eaglesfield, Archt., Gordon-street, Workington.
" 24—Dispensary, Corskeagh, French Park, Co. Roscommon	Castlereagh Guardians.	P. A. Flanagan, Clerk, Boardroom, Workhouse, Castlereagh.
" 24—Old Quay, Repairs and Renewals, Campbelltown	Town Council	J. Fullerton, Master of Works, Campbelltown.
" 24—Premises, Ystradgynlais.....	E. E. Evans	D. Morgan, Archt., Brynbeulog, Gwaun-cae-Gurwen.
" 24—Steading, Meikle Ardo, Methlick.....	Rural District Council	C. G. Smith, Factor, Haddo House, Aberdeen.
" 25—Steading, Auchencrieve.....	The Clerk's Office, Rathdrum, Ireland.	C. G. Smith, Factor, Haddo House, Aberdeen.
" 25—Labourers' Single Cottages (59), Rathdrum.....	Co-op. & Indus. Soc., Ltd.	The Secretary, Priestgate, Darlington.
" 25—Steading, Cairnorrrie.....	Education Committee.....	C. G. Smith, Factor, Haddo House, Aberdeen.
" 25—Premises, Alterations to, Priestgate, Darlington.....	Rural District Council	C. G. Smith, Factor, Haddo House, Aberdeen.
" 25—Steading, Merdrum.....	Urban District Council	C. G. Smith, Factor, Haddo House, Aberdeen.
" 25—Barn, Belnagoak.....	Guardians.....	C. G. Smith, Factor, Haddo House, Aberdeen.
" 25—Double Byre, Flobbets, Tarves.....	Tredegar Indus. & Prov. Soc., Ltd.	C. G. Smith, Factor, Haddo House, Aberdeen.
" 25—Council School, Allanson-street, St. Helens.....	Corporation	Biram and Fletcher, Archts., George-st. St. Helens, Lancs.
" 25—Stable, Sauchenillock.....	Glasgow Corporation	C. G. Smith, Factor, Haddo House, Aberdeen.
" 25—Steading, Cottown of Gight, Fyvie.....	Linthwaite U.D.C.	C. G. Smith, Factor, Haddo House, Aberdeen.
" 25—Cottages in Pairs (10), Rathdrum.....	North-Eastern Railway.....	The Clerk's Office, Rathdrum, Ireland.
" 25—Part of Steading, Catraig, New Deer.....		C. G. Smith, Factor, Haddo House, Aberdeen.
" 27—Storage Sheds, Savile Mills, Savile Town, Dewsbury.....		C. H. Marriott, Son, & Shaw, Church-st. Cambrs., Dewsbury.
" 27—Premises, Alterations to, Dundalk.....		M. Comerford, Town Clerk, Dundalk.
" 27—Wesleyan Chapel, Easington Colliery.....		J. W. Hays, Archt., Wingate, Co. Durham.
" 28—Cottage Homes, Repairs to, Lancaster.....		G. Thos. Wilson, Archt., Durham-rd., Blackhill, Co. Durham.
" 28—Premises, Oakdale Village, near Blackwood.....		A. F. Webb, M.S.A., Tredegar Chambers, Blackwood, Mon.
" 28—Two Tenements, Gallowgate and Moore-st., Glasgow.....		J. Lindsay, Town Clerk, Glasgow.
" 28—Sanatorium & Children's Home, Southfield, Mearns.....		J. Lindsay, Town Clerk, Glasgow.
" 30—Houses 24, Cowlersley, Milnsbridge.....		J. Ainley, Archt., Chapel-street, Slaithwaite.
May 3—Residence, Kelham, Newark.....		Sheppard and Lockton, Archts., Bargate, Newark.
" 6—Offices, Wheel Shop, and Sheds, Dairycoates, Hull.....		A. Pollard, Company's Architect, York.



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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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OUR ILLUSTRATIONS.

Houses for the Staff of H.H. the Maharajah Holkar of Indore, Shirpur Palace, India. Messrs. Sir Ernest George, A.R.A., and A. B. Yeates, F.R.I.B.A., Architects. Views and plans.	
Martin's Bank, Lombard-street, E.C. Elevation and plan. Mr. Ernest Newton, A.R.A., P.R.I.B.A., Architect.	
St. Faith's Chapel, Edmonton, Canada. View and plans. Sir Thomas G. Jackson, Bart., R.A., Architect.	
Eastbury Manor House, Barking, Essex. Measured drawings, elevations, section, and plan. By Mr. Herbert V. C. Curtis, Architect.	

ARCHITECTURE AT THE ROYAL ACADEMY.

Church work, including, of course, the designs for other places of religious service, may be said on the whole to constitute the most interesting feature in contemporary undertakings shown this year at Burlington House. In War-time perhaps this may have been unexpected; anyhow, the examples exhibited are all works in progress, including, as they do, three Colonial cathedrals, while one of the most conspicuous buildings of the class is Sir John J. Burnet's Second Church of Christ Scientist, Palace Gardens-terrace, Kensington.

The hanging has been very effectively arranged, and some uncommonly large drawings have had to be accommodated, though they mainly illustrate unrequited, we will not say unsuccessful, albeit rejected, designs, for the new offices of the Board of Trade, Whitehall, and for the Houses of Parliament, Ottawa. Of the former building, of course, Mr. E. Vincent Harris's selected design, modestly represented by the smallish outline perspective of the river front, which we illustrated at the time of the competition, finds a central place on the line. There is really no more interesting piece of architecture in the gallery. We quite anticipated finding the big and in many ways remarkable perspective of Mr. Edwin Cooper's proposal for this addition to the public buildings of London, and can but express surprise at the absence of the temperate study of Messrs. Adams and Holden's exceedingly capable design for these Offices of the Board of Trade, which we understand the Hanging Committee rejected. Messrs. Robert Atkinson and G. L. Alexander show their enormous frame of beautifully-delineated half-inch details of their design, as well as the perspective drawing. Messrs. Percy Thomas, E. Prestwich, and Ivor Jones send likewise their view, hung on the line, and Messrs. Chas. Gascoigne and George Nott's design, so capably drawn, hangs hard by over the last-named. Of the Canadian Houses of Parliament, Messrs. Clyde Young and H. S. East (1597) show a bird's eye, adroitly composed and illustrating a well-considered scheme, seen looking towards the river. Mr. Vincent Harris considered the prospect from the river far preferable, with his long line of severe Classic buildings surmounting the promontories and rocky shore, and we must say his big picture has special attractions, even if we are left to wonder why the campanile was made to look so very like a factory chimney.

Sir Aston Webb, R.A., and Mr. E. J. Lutyens, A.R.A., do not exhibit this year,

and Mr. Reginald Blomfield has not sent any drawing, being content to be represented by large and well-executed models of a gateway and some large and commodious farm-buildings now being built at Long Sutton, Nants, on a plan supplied by Mr. C. S. Orwin, who, presumably, is an expert in this class of premises. The interest of this design is enhanced by the knowledge that its arrangement is entirely up to date, and Mr. Blomfield has imparted an admirably appropriate architectural character quite equal to anything which we have seen from his hand as regards suitability. These stables and farmstead building are for the Lord Wandsworth Trust, and the institution itself is being carried out from the designs of Mr. E. Guy Dawber, the Hon. Sec. of the R.I.B.A. A prospect of this large pile of buildings is on view in the same gallery (1534), and we have nothing but praise for the merit of the work, which is not altogether so well illustrated or hung as it deserves. The drawing is a very long one, and suffers from having assumed a wavy contour in the frame, which, when seen from above, as it is here, distorts the effect of the water-colour, which already is restless enough, with the buildings set out to so small a scale. Mr. Guy Dawber won the Lord Wandsworth institution in a limited competition, for which the late President of the Institute acted as assessor. Both architects are now in this way busy on an unusually interesting and unique institution, about which very few particulars are at present available; but we shall illustrate the work at an early date.

Sir Thomas G. Jackson, Bart., R.A., has two of his own drawings this year in this Gallery. We reproduce one of them to-day, and so need say no more about the subject, which is the Church of St. Faith at Edmonton, Canada (1653). The plans which accompany the view fully explain its arrangements, and the descriptive note under the heading of Our Illustrations supplies the other information. Sir Thomas Jackson's second contribution is an auto-graph and ink study of the proposed addition to the Museum of Archaeology and Ethnology for the University of Cambridge, as seen from the quadrangle. An octagonal turret for a staircase and topped by an ogee lead-covered roof, is eminently characteristic of its architect's traditional style, and oval windows with cartouche enrichments round, serve to enrich the top stage of this tower. The Botany department of the buildings is set at right angles with the new enlargements seen in this sketch (1566), which evinces marks of the veteran hand. Sir Ernest George, A.R.A., shows no diminution of skill in his water-colour of the graceful Court of the Shirpur

Palace at Indore (1552), which is in striking contrast to the violent drawings exhibited in this same gallery, with strong, ultramarine-blue skies and other chic expedients. Sir Ernest George, with a more modest reserve, is satisfied with quieter and reflected lighting, being content with sober tints, which, however, lack nothing in richness in this double-arcaded court, with the fountain in the midst and a minaret-like turret in the corner, setting its stone-domed roof against the pale blue sky. The same scale of colour occurs in Sir Ernest George's sketch (1029) in the Water-colour Room X. of the Cathedral and Broletto, Brescia, and the contrast to the cruder type of draughtsmanship, to which we have already alluded, makes this exception all the more welcome. Among our plates to-day we have reproduced the second drawing shown by Messrs. Ernest George and Yeates (1562) (though the catalogue only names Sir Ernest George as the architect), illustrating the houses for the staff of H.H. the Maharajah Holkar of Indore. The sepia set of sketches has not the charm of colour peculiar to the other drawing from the same palace.

The President of the Institute, Mr. Ernest Newton, A.R.A., is content on this occasion with two drawings. One is large, and the other perhaps too small. The latter (1555) is the Lombard-street elevation of Martin's Bank, which we include among our inset plates, giving a plan as well, and a brief descriptive note. The lead architraves and fillings between the series of windows, one over the other, in this pleasing façade give a personal touch for niceness of detail, which we have always associated with the buildings of Mr. Newton, remembering similar work of his done in this way at Bromley in Kent, or in that neighbourhood, if our memory serves us. The second, or bigger, exhibit is a set of working sections, elevations, and plans for the Convent Chapel added to the group of buildings which Norman Shaw carried out for the Sisters of Bethany at Bournemouth, and commenced over forty years ago. Needless to say that this addition (1667) will be a great acquisition, and that it will be in strict harmony with the institution to which it is to be attached. We shall illustrate these drawings very soon.

Mr. J. J. Joass sends a graceful little water-colour of the new refreshment building, or restaurant, with which his partner, the late John Belcher, R.A., was connected, and which is now being erected in the Zoological Gardens (1574), in two colours of bricks and corrugated-tiled roofs, with wide eaves, very suitable for the purpose. Attached is a brick-built enclosure, presumably foral frost-tans and such-like entertainments. Another work

associated with the name of Mr. Belcher in a more personal way is the scheme shown by an exquisite water-colour and highly-finished picture (1612), hung in the central place of honour on the long side of the gallery, illustrating the painted decoration of the Council Chamber of the Institute of Chartered Accountants in the City, by Mr. George Murray, of Girdlers-road, W. To the right and left, within spacious architectural settings, and framed thus in a decorative way, are Flamboyant historic scenes so foreshortened (necessary by the perspective) as to give the uninitiated but a suggestive idea of their precise subjects. The apse beyond is in scale of colour, and in the pendentives of the domed gallery above the Council Chamber ceiling, are seated female figures in monochrome, done possibly in relief. The coved cornice of the dome above is coloured very harmoniously indeed; the masterly dexterity of the drawing is admirably sustained, and the way in which the seating and furniture of the chamber is subordinated for the purpose of this study certainly suggests thought; and besides, the effect is true because, when examining the pictorial decorations, the eye could not take in the chairs and the tables, as the camera must: hence the value of a drawing, and the trick of it, too, if you will.

There is far too much trickiness in the coloured draughtsmanship to be seen in the Architectural Gallery, now so fashionable, though monstrosously misleading. The limit is reached when bright cobalt cast shadows are put in on white stone colonnades, seen in high light, or when emerald-green gets touched in, as we see it here in the reveals of window-jambes built in dark brown brick in London, of all places in the world; but then the same laxity in the use of the colour brush occurs, whether the building is in India, Africa, or on the murky Liffey River, in Dublin, or in the respectable, if dull, purlieus of Bloomsbury. The same recipe makes up the prescription for treatment, and this does not suit all architecture. House, "Arcadia," Johannesburg (1580), by Mr. Herbert Baker, looks quite ideal, and its surroundings befit the name, resplendent in white and colour too, so that one is carried away into rapturous delight with ideals beyond the possibility of every-day limitations. The architecture is ambitious, and rightly so, accommodating the Chinese white and the reds and vivid blues, all of a piece; but perhaps on a dull day the best of palaces suffer, like other more mundane conceptions. The same capable architect shows the South African Medical Research Institute at Johannesburg (1543), which has a courtyard in front handled in a severe manner, after the Late Classic of our Horse Guards in Whitehall, one of the best buildings of its day in the Metropolis. Of course, this bigger and bolder African Institute is very different, with its connecting colonnade between the two front wings, and leading to an inner court behind the cross-building, which has an ornate circular turret rising over a pediment done in a reserved way, and keeping in scale, which is greatly perturbed by the overwhelming sky flashings of brilliant blue introduced by the colourist in an attractive way, rather theatrical, and not helpful to good architecture. Hanging between these pictures and above Mr. Guy Dawber's view of the Lord Wandsworth Institution is the Scientist Church, Kensington (1535), all drawn by the same artist. Sir John J. Burnet, R.S.A., is the architect of this group of meeting-places, including a hall and series of classrooms, cleverly planned with a handsome arched cloister along the street frontage in Palace Gardens terrace. To the rear of the

church rises a campanile behind the flat saucer dome, which would not really be seen from the street, and so does not figure in the perspective. The sections, elevations, and plan are very interesting, and explain how the architect has worked out his very original and unusual building. We shall reproduce these very fully at an early date, when we may be able to supply further information about one of the chief works of the year shown at the Royal Academy.

The School of Architecture, Liverpool (1569) occupies the middle position on the wall at the east end of the gallery. The building has a fine rich cornice and a wide base of plain brickwork. A series of panels bear the names of leading architects, commencing with McKim and ending with Girrain. Elmes alone serves to represent the 19th century in England, no Gothicism being so much as named or worthy. The outlook of such a school must be narrow, judged by this choice, though Le Duc is included. Mr. C. H. Reilly is the architect of the school. There are 30 less drawings in this gallery than were shown last year.

THE IMPROVEMENT OF TOWNS AND CITIES.*

The first edition of this work was published twelve years ago, and was a creditable witness to the intelligence and wide observation devoted to its subject by an American writer who had evidently studied his theme with a conscientious and discreet enthusiasm not always to be found even among some of the most eager of our own town-planners to-day. It has been revised and brought up to date, and reviews the whole broad field of modern effort on both sides of the Atlantic, picking out the salient points of the best yet accomplished.

Mr. Robinson deals successively with the sites of plans of the City, the suppression and repression of beauty therein, the æsthetic phase of social and philanthropic effort, architectural development, and obligations, educational and civic æsthetics, and the work of officials. He has travelled far and wide to find his material, and not much worthy of observation has escaped his notice. His remarks on the work of officials are quite as applicable in the case of some of our own town-planning schemes, as elsewhere, which miss their mark and harass property-owners needlessly, because amateur Town Councillors prefer to drive their own hobbies to seeking the aid of architects, while as yet the projects are in course of inception. In Paris, as Mr. Robinson remarks, the artistic adviser has more than merely critical power. He is associated with the Working Committee, and is in constant touch from the beginning with all that goes forward, and with his help the officials are sustained during swift and rational progress to beauty. Thus is built up a firm foundation of belief in the holiness of beauty, regarding which Mr. Robinson's concluding words are well worth quoting:

Looking out upon the world, let it note that if sunrise and sunset, if summer sky and winter night, if beheading heaven and unpeaching earth, have beauty, Nature giving constant example of its coupling with utility, we may accept beauty of environment as part of the Divine plan, and fear to shut it out from the crowded life of cities. For can we say there is no holiness of beauty, that it has no essentialness to Creation's scheme, when we find it shaping the field flower, the fern in densest forest, or the spray-cup of a wave in trackless seas? Consider how the grasses bend in broken beauty at our feet in virgin country, how the sky lavishes its wealth of glory before careless eyes, how the great trees sway and call, put forth tender leaves at spring or flout an autumn splendour.

* The Improvement of Towns and Cities. By CHARLES MURDOCK ROBINSON. Fourth edition. London and New York: G. P. Putnam's Sons, 6s. net.

how the birds translate rapture into music; and the constant, changeless stars soothe weary hours with measureless majesty. When God does this for a lonely child, shall we relax our vigilance to bring beauty to the homes of huddled thousands? Dare we say that a city must be ugly? Something very like religious fervour can be put into the zeal for city beauty, sustaining it through long patience and slow work.

DUSTLESS CONCRETE FLOORS.*

By P. M. BRUNER.

All floors are dusty that wear at all, and in cities all floors are dusty, whether they wear or do not wear; but in this latter case all of the dust comes from sources other than the floor itself. The dusty floor that confronts and concerns the concrete worker is one in which the fine sand or other aggregate ravel out or rolls out of its bedding under moderate rubbing, scratching, or rolling of wheels. This produces, incidentally, both the objectionable dust and grit. Such continuous failures have naturally created a demand for correctives to be applied after the failure has occurred, or for hardeners to be added to the original composition to assist cementing potency of the Portland cement sufficiently to avoid the failure. One corrective of a floor that is faulty is the subsequent painting with ordinary paint, or with paint that has more or less varnish in it. These paints serve in part as a wearing cover, and in part as an agglutinating agent between the grains of sand. They also prevent water from reaching the interior of the top coat thereafter, which otherwise might penetrate and aid in the hardening process in the course of time. Another corrective of a floor that is denominated "dusty" has found advocates. In this process the floor is rubbed or ground with a piece of grindstone fastened to a handle, and assisted by some loose sand scattered over the surface of the floor. This work is so performed that the soft cement between the grains of sand on the upper surface of the floor is rubbed out without disturbing the grains of sand in their bedding. When almost the whole of the upper halves of these grains of sand is exposed the rubbing is discontinued and the spaces around the grains of sand are filled with neat cement, which is ground in with the same rubbing instrument. This process may form a strong filling around the grains of sand, as also a very thin covering over the top of the grains of sand. This is good as far as it goes, and will enable a job to pass inspection that would not pass before. It adds, however, no strength to the weakened cement immediately below the middle of the grains of sand. On this account the trouble may return after the floor has had some service. Instead of remedying the faults of a finished floor, efforts have also been made to increase the cementing potency by adding so-called hardeners to the Portland cements. The active ingredients of most of these hardeners are, chiefly, fine pulverised iron and salammuniac, which are supposed to make between the grains of sand the old and well-known rust-joint, in conjunction with the Portland cement. The work done by us with these hardeners, under the instructions of their official specifications, and under the advice of their superintendents, has failed to justify the claims made for the hardeners. Tests made for us by the Robert W. Hunt Company, with and without hardeners, did not show any advantage for them. Under unusual conditions, as said before, good work has sometimes been done by the ordinary routine work, hence one may surmise that these hardeners have given satisfaction and have been credited with benefits due to other causes than their own inherent value. According to my observations and experiments, I came to the conclusion that cement top-coating on reinforced concrete remains weak and deficient in strength because of the excess of water that is required to make the mortar plastic enough to be properly spread and struck off with a straightedge. This excess of water has no chance of escape downward, and rises toward the surface,

* Paper presented at the last Annual Convention of the American Concrete Institute.

where it remains until the setting process of the cement has well advanced. When a certain portion of the water has become bound in this way, in the setting process, the mortar stiffens up and becomes ready for the usual process of finishing and smoothing. Sometimes the setting goes forward too rapidly, so that the finishing cannot be carried out without sprinkling some water over the top to enable the workmen to work out a smooth finish. It follows that the floor is finally finished only after a period of four hours to twelve hours after the completion was first made into a plastic mortar. Not only is the strength of such a floor injured by the excess of water bound and entangled in the pores of the mass, but also by the disturbance of the crystallisation process. The only feasible way to overcome the difficulties, then, seems to be to withdraw the excess of water that was necessary for the spreading and the rodding of this plastic mass to the desired level or grade of the finished floor. To bring this about, therefore, I lay on the plastic floor surface, when brought to its proper level, a webbing of some kind, and place over this some dry material which quickly withdraws the excess of water by the capillary attraction of the dry materials. This may take up 20 per cent. to 30 per cent. of the water originally used in producing plasticity of the mortar. It will not take up more than this, however much dry material is applied, and the amount of water left in the mass corresponds quite well with the amount that a professional cement-tester considers necessary in making proper test pieces. My surprise in my first experiment, in regard to the condition of the top-coating after the cloth was lifted off with its load of damp material, was great. It had become so hard or stiff, in 20 minutes after the dry material had been placed over it, that one could walk over the surface without even making a heel-mark. In fact, the coating was so dry and stiff that it required a powerful effort to float it with a wooden float to an even finish that could be smoothed off with a trowel. This effort, however, forced the grains of sand so much closer together that in this way some moisture was forced upward from within the more compressed mass, so that the floor could be properly smoothed off. The time between the spreading of the mortar and the smoothing of the floor need not be more than thirty minutes. Without the use of this drying process, we have, as said before, found that it would require the expiration of from four hours to twelve hours before the work could be successfully brought to this stage. What I claim for this process is: first, a harder and denser top coat; second, a wearing coat that is equal to the best work on sidewalks; and, third, the elimination of overtime work by an extra expenditure for labour of only 1-10 cent to 1-5 cent per square foot in laying a floor, and this extra expense is more than offset by the usual cost of overtime work. I do not claim to improve the cement, but I simply get out of it all the strength there is in it. If any hardener can be found that will increase the wear-resisting quality of Portland cement concrete, this process of mine will still be a profitable one, inasmuch as it increases the density of the resulting cement topping, and the work proceeds without delay and without need of overtime work. The process is even more desirable where the wearing coat is placed on the reinforced concrete soon after this has been poured. In this case there is still less chance to get rid of the excess of water downward, for the foundation itself in this case is saturated clear through the mass with the water used in making the concrete itself liquid. It is perhaps also well to point out that the top coat placed over reinforced concrete should not be made too heavy. There is considerable difference in the expansion and the contraction of the two materials under standard specifications. A medium thickness of top coat will, therefore, more readily adjust itself to the reinforced concrete beneath. A heavy top coat, on the other hand, may assert itself sufficiently to bring about a powerful shearing strain between the two, so that they will separate

at the expense of the weaker mass. Specifications should not call for more than $\frac{1}{2}$ in. thickness, nor allow a maximum of more than $\frac{1}{2}$ in. A top coat of $\frac{1}{2}$ in. thickness on sidewalks subject to the heaviest traffic will last more than twenty-five years. The top coat should not be made to correct irregularities of the surface on which it is placed. Those who lay the so-called sanitary or magnesian cement floors will not undertake to lay a greater thickness than $\frac{1}{2}$ in. to $\frac{3}{4}$ in. thickness, because this material expands still more than any Portland cement concrete. Because Portland cement topping demonstrates this fact less clearly, it is generally applied in thicknesses up to $\frac{1}{2}$ in. to $\frac{2}{3}$ in. The reinforced concrete contractor can, if he will, obtain a levelness that will require no extravagant thickness of topping. He can also construct this floor so that there will be no laitance on it. This laitance is a soft, chalk-like mass that has not sufficient strength to hold to the topping, or even to hold to the concrete beneath, itself.

MECHANICAL PLANT FOR HANDLING CONCRETE.*

By W. P. ANDERSON,†

There are two classes of equipment which can be used in a mechanical plant for handling concrete. One class—that which is standard, and which can be used on nearly every job—consists of mixers, hoists, charging and placing barrows, and similar equipment. For this class of equipment the contractor need never hesitate to buy the best in the market, as it can be used over and over again, and is always a good asset. The second class covers that which can only be used in special cases, such as unloading devices, industrial track and cars, cableways, and other special machinery. The contractor should be very careful before investing in the latter form of equipment, as in many cases, unless the character of work which he is doing is such that this special equipment can be used on succeeding jobs, its cost will more than make up for the saving in labour gained by its use. This is particularly the case in reference to large elevated hoppers for holding the concrete aggregate, as the salvage from these hoppers at the end of the job is small compared to their total cost, and unless the job is a very large one the saving in labour does not equal the expense of installing the hoppers and the necessary extra equipment needed when they are used.

METHOD GENERALLY FOLLOWED.

A common method of handling concrete on a building is as follows:—The material comes to the building either by wagon or on cars. The cement is stored in a shed built for that purpose, and the sand and stone are unloaded directly on the ground as near to the mixer as possible. If the building has a cellar below the level on which the material is stored, the mixer is placed in this cellar, and a charging hopper is placed above the mixer with a platform around its top, on or slightly below the level of the ground, where the material is stored. The aggregate will be taken from the storage pile by buggies to the charging hopper, and after the concrete is mixed it will be hoisted and dumped into a distributing hopper, above the floor being concreted, from which point it will be taken by buggies or chutes to the place where it is to be used. Conditions arise at times when certain modifications of this scheme can be used to advantage. There is a tendency sometimes, however, to put in too much equipment, and the contractor will find that the saving in labour does not equal the cost of special equipment. The contractor must also take into consideration that in putting in elaborate equipment he is put to this expense at the start of the job, while the labour cost which it replaced is distributed over the entire length of the job, and therefore it requires more money to carry on a job with elaborate equipment.

CARS TO MIXERS DIRECT.

Where material is delivered to the site of a building by rail and the mixing plant can be conveniently located near the switch, it will often be found a great advantage on a job to handle the aggregate directly from the cars to the mixers without storage. Where this is done it is well to store some of the aggregate for emergencies. A convenient arrangement of the plant for this purpose is to build bins along the unloading switch. These bins need consist of only one partition about 2 ft. away from the edge of the car, with the top of the partition brought up to the height of the floor of a freight car. A division partition in the opposite direction should run out about 10 ft., to separate the fine and the coarse aggregate. A platform about 6 ft. wide should be built at the top of the bin, the planks on the platform not being nailed, so that when desired to unload directly into the bins it can be done by moving the planks over to the edge of the platform. The platform should run, preferably, with a downward grade, to the mixing plant. When this arrangement is followed it is difficult to avoid having some demurrage on cars; but it saves rehandling of material, and in a number of cases this saving is greater than the extra charge incurred for demurrage. On a very large job it may pay to build two overhead charging-hoppers, one for sand and one for stone, and have these so located that the material can be dumped by gravity directly into the mixing-hopper. The mixing-hopper can be so constructed that it will have sufficient sand for a charge when it is filled to a certain height. Then the stone can be added to another height, and after the cement is added the charge will be ready for the mixer, into which it will be dumped by gravity. Where this arrangement is used, a derrick may be placed in such a manner that material can be unloaded directly from cars to the storage-hoppers by clam-shell or similar equipment, which can also be used for unloading into a storage-pile on the ground, as it would be inadvisable to build the storage-hoppers sufficiently large to provide for all the material required. As a general thing, however, it would be possible to locate the unloading derrick in such a position that material could be taken direct from the cars to the storage-hopper, from the cars to the storage-pile, or from the storage-pile to the storage-hopper. In either of the above plans the object is to handle as much material as possible directly from cars to storage-hopper or mixer without a double handling. In unloading material from cars where the above arrangement is not practicable, it is sometimes found advantageous to have a hopper which can be fastened to the side of a car, so that material can be shovelled from the car directly into the hopper. The advantage of this is that no time is lost in shovelling from the car, and also that more trips can be made in hauling material from the car, as there is no long wait during loading. In our work we have found that where a level run can be used, a two-wheel buggy, holding 4 cu. ft., is the most convenient form of equipment for getting the aggregate from the storage piles to the mixing plant. Where wheeling is bad, an end-dumping 3-cubic foot wheelbarrow can be used to better advantage. These barrows are used as a gauge for measuring material. In some cases, however, where material comes in by rail and the switch is over 200 ft. from the mixing plant, it will be found advantageous to transport the aggregate from the switch to the mixer by industrial tracks and small side-dumping cars. Where conditions are such that the mixer cannot be placed low enough to have the cars dumped directly into the hopper above the mixer, without elevation, cars can be brought up an incline to the desired point and thus dumped directly into the charging hopper. Where this is done, the cars can be hauled up this track by the same engine which operates the mixer, and the rest of the track can be graded so that the cars operate by gravity. On one job in the writer's experience, where double tracks were run into the building after it was completed, it was found practical to place the mixer at the end of these tracks. As soon as the concrete had been

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finished to the point where the tracks were to go, the latter were put in place and cars were backed up within 10ft. of the mixer. A small 6in. I-beam track was placed above the centre line of each car. This track ran to a point above the charging hopper, which emptied directly into the mixer. A scraper, similar to an ordinary dirt scraper, was used for conveying the material from the car to the charging hopper. A steel cable was attached to this scraper and passed over an 8in. sheave, attached to an overhead traveller which ran on the I-beam track, and was attached to an extra drum on the hoisting engine. The traveller was about 18in. long, and extended about 4ft. below the track. On this lower portion was a catch to hold the scraper when the traveller was in motion. A lever released this catch, allowing the scraper to drop and at the same time lock the traveller to prevent it from sliding back towards the mixer. The locking device was not sufficient to prevent this from sliding entirely, and a rope was used to hold the traveller in position while loading the scraper. The I-beam tracks were long enough to unload two cars on each track without switching, and as we were able to have cars switched morning and noon we could unload eight cars of aggregate per day. On this job there was practically no room for storage of aggregate and it was handled directly from car to mixer. The I-beam tracks were inclined, so that the empty scrapers returned to the car by gravity.

LOCATION OF MIXING PLANT.

The location of the mixing plant on any job is determined by two factors: first, depending on the ease of getting the materials of which the concrete is composed delivered near the plant; second, the position of the plant relative to distributing the concrete to all parts of the work with as little labour as possible. A mechanical mixer is most commonly used for reinforced concrete work. We find what is known as a 4-bag mixer the most convenient size for general work. It is often necessary to place some of the concrete footings before the mixing plant can be permanently located for the building construction. In a number of cases it will be found as cheap to do this preliminary concrete work by hand as in any other manner. Therefore, when the mixer is finally set up it is generally in a permanent position for mixing the concrete for the job in question. In nearly all cases it will pay to arrange the mixing plant so that the cement and aggregate can be dumped into a charging hopper, which allows a complete charge to be dumped into the mixer at one time. This saves time, as while the mixer is mixing one charge another charge can be prepared. In laying out this plant it is much the best to have this charging hopper stationary and above the mixer, so that the charge can go directly into the mixer without being elevated. It will often be found cheaper in the end to dig a hole in which to place a mixer rather than to use any elevating machinery; however, in some cases, where the work is not extensive enough to warrant this expense, some form of hopper can be used into which the material can be dumped, lifted and dumped into the mixer. Mixers are sold with attachments of this kind which can be used when desired. Another satisfactory arrangement of plant, where the mixer cannot be charged by gravity without elevating the aggregate, is to have a bucket hoist adjacent and similar to the concrete hoist. The charge is dumped dry into this bucket, elevated and dumped into a stationary charging hopper, and from there goes by gravity to the mixer. This method has the advantage of having two charges ready ahead of the mixer. The same engineer and engine on the regular hoist can be used here. The hoist we have adopted for our work on ordinary buildings is a bucket hoist with a frame tower, with lumber cut to standard sizes, so that it can be used on any job. The concrete dumps directly from the mixer into the bucket and is lifted and dumped into the distributing hopper. This hopper is raised to the desired height on the tower by a block and fall. We usually take concrete

from this hopper either by two-wheel buggies containing about 6cu.ft., or by concrete chutes. The runways for these buggies are formed by 2 by 12 planks raised on small trestles about 1ft. high, which keep the run-away above the steel reinforcement. The hopper is kept at sufficient height so that the buggies can get underneath the chute at its lower end. Where the building covers a good deal of ground, it is often found convenient to chute the concrete from the main hoist to various portions of the work, and in some cases to re-elevate and re-chute. The angles of the chutes depend somewhat on the character of the concrete and of the aggregate of which it is composed. We have found that a convenient slope is 1ft. vertical to 4ft. horizontal. Where wire ropes are used to suspend the cable, the ropes should be drawn as taut as possible, so that the inclination of the slope of the chutes will not vary when the concrete starts to flow through them. A convenient way of drawing this rope taut is to stretch the rope as tightly as convenient, and then attach another rope to it and pull down on the other rope. Another convenient method of handling chutes is to have a boom attached to the concrete hoist. We have found a convenient arrangement for this is to have chutes about 34ft. long, one end of the chute being attached to the bottom of the hopper at the top of the hoist, with gate to allow concrete to run into the chute as desired. The other end of the chute is held by a line attached to the boom above that end of the chute, the boom being a split-boom so designed as to allow the chute to pass through it. Another chute of the same length can be attached to the lower end of the first chute, and concrete from the first chute dumped into the second, the lower end of the second chute being held above the floor on which concrete work is being done by a light A-frame made of wood. The boom should extend 10 or 12ft. beyond the point where the first chute is attached, and a block and fall run from the end of the boom to a point on the second chute 5ft. or 6ft. from its lower end. Then, when it is desired to move the second chute, this end can be raised by the block and fall and swung to a new position. It will be found that this will hardly answer for the purpose of holding the chute when concreting, so that the A-frame under the lower end will be necessary, and the block and fall is only used for the purpose of changing the position of the chute. A small chute 10 or 12ft. long, moved by hand, can distribute the concrete from the end of the second chute. Of course, in chuting in this manner, the distance the concrete can be taken is limited, but we have found it a very satisfactory method where the distances are not too great. Very often it is found advisable to chute the concrete to certain points on a job and wheel from these points to the position where the concrete is used. Another method of handling concrete on buildings is the use of large derricks and bottom-dumping buckets. We tried this method on several jobs, using two 80ft. boom derricks, which were placed on wooden towers adjacent to the buildings, the towers being high enough to allow the boom to clear the roof, so that the derricks were not moved after being placed until the job was completed. The buckets were large enough to receive one charge direct from the mixer, and the concrete was dumped, in most cases, directly on the forms where used; otherwise, where the derrick would not reach, the concrete was dumped into a hopper and from there wheeled to place. These booms could also be used for hoisting form work, steel, and other building material. The disadvantage of this form of plant is that its use is limited, because it requires room for placing and operating the derrick, which is not always available; also, in congested districts, it is often impossible to guy the derrick. The cost of placing and removing the derrick is so great that it can only be used economically on large jobs. Therefore, as the first cost of this form of equipment is rather great, and its use is restricted, it is not recommended for general use.

THE STABILITY OF QUAY WALLS ON EARTH FOUNDATIONS.*

In spite of the large amount of experience which has been gained in the construction of quay walls, it is still one of the most difficult problems in engineering to design a wall on an earth foundation with confidence that it will be stable when completed. A warehouse or a bridge can now be designed not only with the assurance that it will bear its load, but also with a knowledge of its factor of safety sufficiently accurate to satisfy the designer that material has not been wasted. But the same can certainly not be said of a retaining wall on a soft bottom—at all events, not of a wall, say, 40ft. to 80ft. high, such as is commonly needed to sustain the quays of a modern dock. Even if the designer of such a wall is assured that it will stand, he cannot with any confidence tell you what factor of safety it possesses. The cause of his uncertainty is, of course, the difficulty of ascertaining the actual lateral pressure imposed by an earth backing, and the actual resistance offered by an earth foundation. His difficulties are thus different from those of the engineer who has to design large masonry dams. The latter structures are invariably placed on a foundation of solid rock, and the designer's chief care is that the stresses in the masonry of which the dam is composed shall not exceed a safe limit. The dock engineer, on the other hand, has to be anxious that his wall shall not move as a whole on the comparatively soft material on which such structures have in general to be placed. The object of this paper is to consider the uncertainties and difficulties which the designer of a quay wall has to face, and, if possible, to ascertain how far calculations can assist him, and how far he must trust to judgment based on experience. It is also intended to urge upon this institute the importance of collecting information upon this subject, in the hopes that by degrees these difficulties and uncertainties may be cleared away. A retaining wall may fail as a whole in two ways: (1) By sliding forward on its base, and (2) by overturning. It may be said at once that as regards quay walls, at least, the former mode of failure (by sliding forward) is by far the more common. The conditions of stability in a "gravity" wall may be summarised thus. The forces tending to thrust the wall outwards (generally the lateral pressure of the earth backing) must be at least equalled by the forces tending to restrain it or thrust it inwards. The latter forces are generally the pressure of the water under it, in front of it, the resistance of the earth in front of its toe, and the horizontal resistance to shear (or the friction) at the base of the wall. If these horizontal forces balance, the wall cannot slide forward. The resultant of the outward forces, however, is almost always at a higher level than the resultant of the inward forces. Thus a couple is formed tending to overturn the wall about its toe. This couple induces a counter-couple tending to keep it upright. The forces forming this counter-couple consist, on the one hand, of the weight of the wall acting vertically downwards, together with the weight of any earth or water which may lie above the base of the wall, and, on the other hand, the upward resistance of the earth under that base. If the upward resistance of the earth beneath the wall is capable of forming with the downward weights a couple at least equal to the overturning couple, the wall cannot overturn. In order that the earth beneath the wall shall be capable of forming this righting couple, two things are necessary. It is obvious that the centre of the earth's resistance must be forward of the centre of gravity of the wall and of other loads on the base, and generally it is forward also of the mid-point of the base of the wall. Consequently the intensity of upward resistance is generally greatest at the toe and least at the heel. To preserve stability the resistance at the toe must not be greater than the maximum which the earth

* Abstract of a paper by Mr. F. E. WESTWORTH SHELDS, M.Inst.C.E., read at the last meeting of the Concrete Institute.

is capable of offering, and that at the heel must not be less than the pressure induced by the tendency of the earth to rise at this point. Calculations for the stability of quay walls cannot in our present state be always relied upon, and failures on the one hand, and waste of material on the other, are liable to occur even to the most careful and experienced designer. This, however, is not saying that such calculations should be entirely ignored. On the contrary, they are most useful in suggesting means for increasing in the most economical manner the stability of designs which are known or suspected to be weak. The author then dealt with some devices which have been used for increasing the stability of quay walls—namely, (1) Admission of water into dock; (2) sinking foundations deeper; (3) building buttress walls in front on main wall; (4) making wall wider; (5) removing a portion of the backing; (6) improving backing; (7) sloping base of wall; (8) driving piles under base; (9) anchor ties; (10) lengthening toe. In conclusion, it may be said that, owing to the difficulty and expense of making experiments on large walls, it is the more important that careful records should be kept and published of both successes and failures in this class of structure. Such records should include not only dimensions of the wall, and careful notes as to the nature of the materials employed, but also the calculations for stability, with the formulæ used, the assumptions made for the values of constants in those formulæ, and the reasons for such assumptions. It is, of course, unlikely that it will ever be possible to design large quay walls purely from rules and without some measure of judgment; but if a body of information, as suggested above, could be collected and analysed, it would help and clear away some of the uncertainties which now beset that interesting though troublesome problem—viz., the most economical design of high quay walls on earth foundations.

CORROSION OF IRON AND STEEL WATER MAINS.

A paper on this subject was read by Mr. W. J. E. Binnie at a meeting of the Institution of Sanitary Engineers at Caxton Hall, Westminster, on April 14.

The author said internal corrosion and incrustation of the pipes caused a material reduction in their carrying capacity, especially with the soft moorland water of the northern counties. This had to be allowed for by designing the pipes of such diameter that they shall still be able to pass the required quantity of water, even after incrustation has taken place. Although incrustation could be removed by mechanical means, the protective coating could not be restored, and once scraped, the pipe deteriorated rapidly, required frequent rescraping, and presented fresh surface for attack, with ultimate reduction in the strength of the pipe. The economic bearing of corrosion was even more important in the case of steel than of iron, as, owing to the smaller thickness of the pipes, the loss by corrosion represented a much larger percentage loss of strength.

It has long been known that, for the corrosion of iron, water and oxygen are required, and, according to the older chemical theory, the presence of an acid is also necessary. This is usually found in the carbon dioxide present in the air and water. According to this theory, this carbon dioxide combines with the iron to form soluble ferrous carbonate or ferrous hydrogen carbonate. The oxygen of the dissolved air then converts the soluble iron salt into ferric hydroxide, which is deposited as rust and liberates carbon dioxide, which is free again to attack the iron; and so the process is repeated until protection may be found by the deposition of rust on the iron. It appeared from later experiments that acid was not necessary if dissolved oxygen were present in the water, and an electrolytic theory was put forward. According to this, the water contains free positively charged hydrogen

ions. The hydrogen ions tend to combine with the dissolved oxygen, but cannot do so until they obtain a negative charge. This they obtain from the iron which is changed into the ionic state, combining with the hydroxyl ions to form ferric hydroxide or rust. According to some experimental evidence, however, corrosion does not take place when all traces of CO_2 are removed, even if dissolved oxygen be present. The matter is a controversial one, but the author declared that the balance of opinion was in favour of the electrolytic theory. A biological theory has also been put forward, attributing corrosion to the action of organisms; but, as corrosion takes place under conditions that inhibit life, this explanation is improbable; although it is possible that the acid secretions of organisms in the water may accelerate corrosion in some cases.

Internal corrosion of water mains is accompanied by the deposition of incrustations of a limpet-like form, the upstream face of the limpet being steeper than the downstream face. They rarely form to a greater height than 1½ in. in large mains. They are hard without and soft within, and are composed of concentric layers of ferric oxide, the outer layers being sometimes black magnetic oxide. The iron below the limpets is invariably pitted by corrosion. Whether the electrolytic or the acid theory be correct, the presence of dissolved oxygen in the water is essential before corrosion takes place. The question naturally presents itself whether comparative immunity from attacks could be brought about by the partial removal of the dissolved oxygen from the water. In the case of a 350-mile 30 in. main between Mundaring and Kalgoorlie, Western Australia, such a course was suggested on the occurrence of severe corrosion, but was not put into practice. The idea was to remove the air by spraying in a vacuum.

As might be expected, the corrosion increases with the rapidity of flow of the water; but there appears to be a critical velocity above which the corrosion ceases to rise, and even diminishes again. Sewage contamination appears to use up the free oxygen, and, provided there is no deleterious acid present, such water does not corrode the pipes to any great extent. Grease also acts as a protective. Hard waters, such as London water, are only slightly corrosive. The addition of alkaline solutions greatly diminishes corrosion. External corrosion of pipes is much increased by the presence of sea-water, and contact with ashes and cinders has a deleterious effect, probably due to galvanic action. It is generally agreed that cast iron resists corrosion better than steel, and that this is largely due to the siliceous foundry skin affording a certain measure of protection.

Experiments show that, speaking generally, the harder the steel the less liable it is to corrode. Hard steel, however, cannot be used for welded pipes. Small percentages of chromium and copper are of value in reducing corrosion; but it is important to specify a low manganese content, as manganese generally indicates the presence of manganese sulphide, which increases the liability to corrosion. Nickel is a valuable adjunct in reducing corrosion, but is only really effective in large quantities, which renders the steel unsuitable for pipes. Provided that phosphorus is limited to 1 per cent., its presence is rather beneficial than otherwise. Silicon has a marked preventive action; if there be 20 per cent. present, the product is practically incorrodible, whilst 3 per cent. has a marked beneficial effect. Unfortunately, such high percentages render the metal unsuitable for pipes, owing to its excessive hardness and brittleness. The presence of sulphur is always objectionable, as it not only tends to set up galvanic action, but forms sulphuric acid in addition. Steel which has been subjected to stress is more liable to corrode than unstressed metal. It is, therefore, important to remove the internal stress by annealing.

In the early days of electric traction considerable damage was brought about by stray currents; but recent Board of Trade

regulations afford quite sufficient protection to water-mains, provided they be kept at least 2 ft. clear of the rails, and that the ground be not impregnated with salt water, in which case it is well to surround the pipes with lime concrete as an additional protection beyond the usual coating mixtures. Abroad, it is well to give the rails a wide berth, unless the regulations afford protection equivalent to that given by the Board of Trade.

For ordinary cases, it has been found that a coating of Dr. Angus Smith's solution is a fairly efficient protection against corrosion. The mixture used nowadays consists essentially of coal-tar and pitch-oil in the proportion of 2 to 1 by bulk, and the pipes are dipped in this at nearly boiling temperature after all rust and scale have been removed. There is a possibility that pinhole penetrations caused by air bubbles will impair the coating, and a second dipping is advisable. In the case of an important pipe line at Birkenhead an entire recoating of the inside of the pipes with Siderosthen, an oil-tar mixture, is specified. For outside protection a wrapping of hessian saturated with bitumen is usual. The wrapping on the joints and on places where the hessian has been damaged in transit has to be done in the field.

THE LONDON COUNTY COUNCIL.

At its meeting on Tuesday the London County Council was recommended by the Local Government Committee to extend for another five years the agreement between the Council and the London Survey Committee for co-operation in carrying on the survey for the memorials of Greater London. Three volumes have been published, and a fourth is nearing completion. The Council bears the cost of the volumes and takes the proceeds of the sales.

The Public Control Committee reported with regard to the proposal to remove Covent Garden Market to a site adjacent to railways, so that the streets should be relieved of the inconvenience of market carts, and time saved in the handling of goods. The committee have agreed that the present is not an opportune time for dealing with the various considerations involved. The matter will receive attention when circumstances are more favourable.

It was stated that two large vases of green malachite recently bequeathed to the Council have been placed in Committee-room No. 3 at the County Hall, and a brass plate has been placed upon one of the pedestals recording the fact that the vases were presented to Sir John Frampton by the Czar Alexander II. in 1861, and were left to the Council by Sir John's nephew, Mr. Henry Lorenzo Jephson, who was a member of the Council from March, 1901, until his death on January 31, 1914. Among recent loans to the Geffrye Museum, at Shoreditch, the most important are an old oak staircase from the palace at Llandaff, lent by the Bishop of Llandaff; and a collection of pictures and a selection of old English porcelain, lent by the Hon. C. T. Fisher.

The Housing Committee reported that on the first part of section C, White Hart-lane estate, Tottenham, 79 cottages, with accommodation for 619 persons, have been completed. Inclusive rents have been fixed for the new cottages as follows:—Five rooms, bathroom, and scullery, 12s. to 13s. 6d. a week; four rooms, bathroom, and scullery, 10s. 6d. and 11s. a week; three rooms and scullery, with bath, 8s. 6d. to 9s. 6d. a week.

The Education Committee reported that the Council on April 22, 1913, approved in principle an open competition for obtaining designs for the erection of two public elementary schools, one of which is to be erected in Billingsgate-street, Greenwich. Mr. J. W. Simpson, F.R.I.B.A., was appointed assessor. The Council on February 17, 1914, approved certain conditions under which the competition should be held, and sanctioned expenditure of £1,000 for preliminary expenses in respect of both schools. Thirteen designs were submitted

for erecting the school in Billingsgate-street, and the assessor's award was reported to the Council on October 20, 1914. The award was made to design No. 50, of which the authors were Messrs. Wright and Chapman, 38, Grainger-street West, Newcastle-on-Tyne. The plans submitted by the successful architects have been approved by the Board of Education, who, however, draw attention to three points in connection therewith—viz., (a) the method of calculating the playground allowance for the junior mixed and infants' departments; (b) the desirability of (i.) reducing the width of the corridors from 9ft. to 7ft., and (ii.) inserting cupboards in the partition walls under the windows of the classrooms. The committee stated that they had referred the question raised by (a) to their Elementary Education Sub-Committee to deal with. As regards (b) (i.) they had been in communication with Messrs. Wright and Chapman as to reducing the width of the corridors, and, in view of all the circumstances, the Committee have decided to adhere to the plans as submitted. With reference to the Board's third suggestion, the Committee propose, with the concurrence of the successful architects, to adopt the suggestion, and also to provide built-in cupboards in the halls, in the recesses of the corridor walls, instead of supplying portable cupboards. The school is in the building programme for completion by March, 1916, and the Committee have arranged with Messrs. Wright and Chapman to submit monthly reports of the progress of the work.

The Building Act Committee have appointed a sub-committee, consisting of three members in addition to ex-officio members, to consider and report upon all questions relating to means of escape arising under the London Building Acts (Amendment) Act, 1905, and the Factory and Workshop Acts, 1901-1907. On the recommendation of the committee, it was decided not to proceed further with the proposal to call a conference of Metropolitan local authorities to discuss joint action in town planning.

The Building Act Committee reported that they had before them a proposal submitted by one of the principal architects to H.M. Commissioners of Works for laying out an estate in Woolwich, and for the erection thereon of a large number of houses for the accommodation of workmen employed at Woolwich Arsenal. The work is being executed under the powers conferred upon the Commissioners by the Housing Act, 1914. The Committee had made several suggestions for alterations in the scheme, and understood that the suggestions will be adopted. They were, however, informed that the Commissioners hold the opinion that the London Building Acts do not apply to schemes carried out by the Commissioners in London under the Housing Act, 1914. "In view of the special circumstances which made the execution of the scheme a matter of extreme urgency, we have refrained from raising the question of the extent to which the London Building Acts apply to this particular scheme; but we have caused a letter to be sent to the Commissioners informing them that the Council cannot accept the view that the Building Acts do not apply to such schemes, and that the action taken in this particular instance must not be construed as in any way prejudicing the Council with regard to the point should it hereafter be thought fit to raise it in relation to any similar scheme which may be put forward in future."

The same committee reported that the district surveyorships for Greenwich and Woolwich, which became vacant on the 8th inst. by the retirement of Mr. Alfred Conder, had been divided into two districts, the dividing line being the borough boundary. In the meantime, until the appointment of the two new district surveyors, Mr. Conder will hold interim office over the original area.

The Home Secretary has allowed, as from March 25 last, the by-laws made by the Council on November 3, 1914, under section 2 (1) of the Advertisements Regulation Act, 1907, for the regulation and control of hoardings and similar structures used for the purpose of advertisements when they exceed 12ft. in height. The by-laws apply to the

whole of the county, excluding the City of London, and will be administered by the borough councils.

Under the Mall improvement scheme, the Council has, it was announced, now settled with the Phoenix Assurance Company for the payment of £70,000 for the freehold interest with possession of No. 57, Charing Cross, and No. 15, Spring Gardens.

BUILDERS' CLERKS' BENEVOLENT INSTITUTION.

The thirty-seventh annual dinner of the Builders' Clerks' Benevolent Institution was held in the King's Hall, Holborn Restaurant, on Tuesday evening. About three hundred members and guests were present. The chair was occupied by Mr. F. Higgs (of Messrs. F. and H. F. Higgs, Loughborough Junction), supported by Mr. Edwin Brooks (treasurer) and Messrs. B. C. Aldous, J. B. Attfield, S. C. Baker, Dudley Bartlett, C. E. Blomfield, A. C. Ellis, N. W. Gorringer, O. J. Healing, H. F. Higgs, E. J. Hill, C. H. Mabey, D. Middlemiss, Octavius Newling, G. H. Parker, Alan Paull, J.P., F.S.I., Alexander Ritchie, J.P., E. H. Selby, E. J. Strange, Godfrey Sykes, C. Harrison Townsend, F.R.I.B.A., E. A. Ullman, A. G. White, T. L. Wilson, John Austin (secretary), etc.

The usual loyal toasts were given from the chair, with a difference, the third one taking the form of "His Britannic Majesty's Forces and Allies," and being drunk first in silence, in memory of the fallen brave, and then with cheers for the gallant men who are still defending our hearths and homes. The toast of the evening, "Success and continued prosperity to the Builders' Clerks' Benevolent Institution," was given by the President, who remarked that the institution, which was founded in 1866, now some forty years ago, was established for the benefit of the builders' clerks of the Metropolitan area. They were a worthy, industrious, and courteous body of men, who rendered the builder great assistance in his work. When the Legislature, in its wisdom, now a good many years ago, established a scheme for compensating those who met with accidents, it looked carefully after the workman, but left the clerk out in the cold. Yet the clerk was expected to keep up a greater appearance of respectability than the working man, while the exigencies of business did not permit the master builder to pay him a princely salary: a wage of £4 to £5 placed the clerk at the top of his class, and the average was nearer, he feared, 30s. a week, which with present prices did not allow him to save much towards retirement or to provide for his family at his death. The institution had a respectable membership, but hardly what might be termed a respectable income. Pious founders of the past had given or bequeathed sums which had been invested and now brought in about £172 a year, and subscribers aided with another £170 a year; about £725 per annum was paid out in pensions to clerks and their widows, administration cost the modest sum of £100 a year, so that about £480 had to be raised by that evening's dinner. Their scale of pension was a modest one—only £2 a month—and yet the committee had not been able to see their way to augment the amount or to increase the number of pensioners. The President closed with a stirring appeal to all to double their customary subscription or the donation they had proposed to give. Mr. W. F. Wallis gave, in humorous terms, the health of "The Architects and Surveyors," which was felicitously acknowledged by Mr. C. Harrison Townsend and Mr. Alan Paull. "The Builders and Builders' Merchants" was proposed by Mr. Godfrey Sykes, hon. solicitor to the institution. The toast was responded to by Mr. E. J. Strange, the newly-elected President of the Institute of Builders, who pleaded strongly the claims of the institute on all those for whom he replied, and, in an amusing and anecdotal speech by Mr. Alexander Ritchie. The closing toast was "The health of the President," given by Mr. C. H. Parker, immediate past-president, and received with musical honours. The Presi-

dent, in his reply, announced that he had received £244 in response to his appeal, which, on receipt of another £10, he should be glad to make up to the amount obtained last year—namely, £304.

MUSEUMS OF ART AND THEIR HISTORIC VALUE.

Mr. W. W. Watts, F.S.A., of the Victoria and Albert Museum, South Kensington, gave a lecture on Tuesday evening, at the Museum Lecture Theatre, Clifton, Bristol, on "The Historic Value of a Museum of Art."

Mr. Watts said he found that many people visited museums in a casual, aimless way, and the objects amongst which they wandered had no living interest for them. Some years ago, anything artistic which came down to them from centuries gone by, were designated by the unhappy word *curio*, and it seemed that some people, in going to a museum, thought they were going to see "curiosities."

The reason why those people did not appreciate museums was that their imagination required stimulating, and that they lacked a greater spirit of inquiry. Behind the objects seen lay an endless wealth of historical interest and information. The objects reflected the spirit of the age which produced them, and were silent witnesses of the influences of their own day. Therefore, in visiting a museum of art, they should try to read what lay behind the productions they saw. Every change of form had something to tell them of some corresponding change in the history of the country at that particular time.

First, Mr. Watts reminded his hearers of the witness which the objects in the museums bore to the artistic history of this country, and to our English ability and skill; and, secondly, he asked them to think of the witness the objects bore to the life, manners, and customs of the times which produced them. It was a common charge against us in this country that we are an inartistic race, and we possess so much modesty that we had come to believe we are an inartistic people; but we had produced a long list of splendid craftsmen for the last thousand years, and our designers were considered the best in the world.

With the aid of lantern slides, examples of goldsmiths' work, embroidery, ironwork, furniture, stained glass, and bookbinding produced in this country from very early times were shown, Mr. Watts referring in a fascinating manner to historical events and customs associated with the making or use of the various objects. Incidentally he alluded to some fine examples of ironwork to be found in Bristol churches, and congratulated the Bristol Museum upon possessing examples of ironwork and oak panelling which would form the nucleus of an interesting section of the exhibits.

The Local Government Board have sanctioned a loan of £12,500 to the corporation of Barrow-in-Furness for the extension of their electricity works.

At Calcutta a large block of business premises has just been erected at the corner of Clive and Clive Ghat streets from plans by Mr. Vincent Esch, of that city.

It was reported to the Maidstone Rural District Council at their last meeting that Bow Bridge, which is being reconstructed, will be completed in June. Mr. Halls is the engineer, and the Enderby Contracting Co. are the builders.

Mr. H. A. Bayfield has been appointed by the Dominion Government of Canada principal assistant engineer at Fort Nelson, the terminus of the Hudson Bay Railway. Mr. Bayfield was formerly superintendent of Government dredges in British Columbia.

The Local Government Board have given authority for the preparation of nine further town-planning schemes under the Housing and Town-Planning Act, 1909. The schemes are authorised to be prepared by the corporations of Newport (Mon.), Southend-on-Sea, Wallasey, and York; the urban district councils of Beckenham, Hendon, Heston and Isleworth and Ruislip-Northwood; and the rural district of Honiton.

Currente Calamo.

The Council of the Royal Institute of British Architects have received a report from the Official Architecture Committee, which was appointed in 1912, to consider and report upon the whole subject of official architecture. In the opinion of the Council the report is of such a controversial nature that the present is not a suitable time for its discussion, and the Council have accordingly decided to defer its consideration for six months. A similar decision has been arrived at in connection with other controversial matters which are being dealt with by the Council. This is beyond doubt a wise course. The present is no time for the ventilation of grievances. The obvious duty of the moment is so manifest, and the call thereto has been so well responded to by architects, official and unofficial, that it would be almost an impertinence to discuss their differences in their absence.

The demands of the trades connected with the building trades of London matured yesterday week at a conference of their representatives with the London Master Builders' Association, when a request for an advance of 2d. per hour for all trades was put forward. After discussion, the London Master Builders' Association Council decided that they could not agree to any further increase in the rate of wages, but were willing to recommend the extending of the ordinary working hours, such extension not to exceed two hours per day first five days of the week until September 30. In a statement since issued, the London Master Builders' Association say: "Under this proposal the employer would only benefit to the extent of being able to make a little more progress. It would not bring him any profit (if he paid any overtime rates it would only increase his loss); the workmen would draw increased wages each week, which would, to a great extent, meet the extra cost of food, etc., and consequently the only contribution of the workman towards the national crisis would be that he should work from five to ten hours extra per week at full pay. This did not appear to demand any great sacrifice, and would to a great extent solve the problem of the increased cost of living." This offer was refused. Unwisely, we think. There are many of us working many more hours than that just now with diminished incomes, and many more who would only be glad of the chance to do so. As a temporary expedient to meet the exigencies of a situation for which neither men nor masters are responsible it deserved a more patriotic response.

Some wholesome truths were spoken by the managing director of Richardsons, Westgarth, and Co. on Tuesday, which more of us might well digest. Mr. Morison said that when the company was formed the normal profit on marine engine-building was 15 per cent. Immediately before the war it had fallen to 5 per cent. Profits gradually decreased from 1900, because of the competition of engine builders on the North-east Coast, where the capacity for building engines considerably exceeded the capacity for building ships. If there was a body of commercial lunatics in this kingdom, it was those associated with marine engineering. The money thrown away through mad competition was really astounding. Not more so, we fear, than in

some of our other industries, with which we and our readers are more immediately concerned. It is poor "captainship of industry" that will do "business as usual" at a loss, simply to cut other people's throats, in the hope of snatching contracts, or monopolising work. We suppose it will last, in marine engineering, in building, in journalism, and other callings, till the public grows wise enough to understand that it is almost invariably defrauded by false pretences of cheapness which are incompatible with honesty and good work, and as such deserve the reprobation of all decent people.

A Winnipeg telegram says that the Royal Commission appointed to investigate the charges made by the Opposition in connection with the contracts for the new buildings of the Manitoba Parliament, at Winnipeg, has decided to call and pay the expenses of Mr. F. W. Simon, F.R.I.B.A., of Liverpool and East Grinstead, whose plans were selected by the assessor, Mr. Leonard Stokes, in the Empire Competition, and were adopted, but were afterwards modified, necessitating a greatly increased cost. Mr. Simon's designs were, it will be remembered, fully illustrated in our issue of September 22, 1912, when we published a critical review of the four premiated schemes.

A leaflet has reached us issued by "The Industrial Reserve," of 227, Strand, W.C., organised to recruit the services of all, irrespective of station or calling, who are able either to help directly in the manufacture of munitions of war, or to take the places temporarily of enlisted workmen. The unskilled workers wanted are men able to do ordinary labourer's work of various kinds, such as mixing concrete, wheeling barrows, driving carts, packing munitions, and the like. Or semi-skilled mechanics possessing some special mechanical skill or aptitude—e.g., model makers, men who have been through the shops in earlier years, and the best types of skilful amateurs. Skilled workers of every kind, or efficient substitutes temporarily for enlisted men in almost every trade or calling, are especially needed. The "Industrial Reservists" will work side by side, and for the same wages as the regular workmen; but it will be a condition of their enlistment that they are to be withdrawn as soon as the war is over. Physical ability, moral strength to carry on, and loyalty to the Reserve, are the three indispensable qualifications, and some of our own readers who can guarantee these, and who at present are unwillingly idle, should be able to respond, and thus do good service to the State, and tide over the bad time not a few are experiencing.

The German cement industry is feeling the effects of the war severely. Dividends have been entirely passed by some concerns, including the Lottingen Portland Cement Works of Strassburg, which last year distributed 9 per cent., and which now state that the works are idle, and that it is doubtful when it will be possible to resume operations soon, even on a small scale. The Syndicate's allotments for the first two months of this year fell to $\frac{1}{2}$ per cent., recovered to about 25 per cent. for March, and are expected to be larger for April. The price was recently advanced, but old contracts are so much in arrear, owing to postponed building operations, that deliveries will continue for some time at the old comparatively low price.

which was based on big deliveries and much cheaper raw material. It is said that demands have been made by some works for a dissolution of the Syndicate, on the ground that the deliveries have fallen to much below the contract minimum basis, which was fixed at 50 per cent. of the output. The demands have been resisted by other works on the plea of *force majeure*, and a decision has been postponed.

Kaemon Takashima, the man who opened Yokohama to foreign trade, started modern industry in Japan, planned the first railway, established the first large foreign hotel, organised the first gasworks, opened the first private school, introduced the modern sewerage system, and did a great many other notable things for the good of his country, must have been a person of remarkable character and ability. He died last year. His method as a contractor is naively described by the *Japan Magazine*. In co-operation with an American architect, Takashima undertook many buildings. He told the architect that as the latter had skill but not capital, he would supply the capital and they would work together, and they did. "In the presence of others you must always praise me and I will praise you," said they to each other; and the plan worked like a charm. When the mob burned the British Legation in Kanazawa, Takashima and his architect friend got the contract for its re-erection. The American architect drew a plan for it, which the British Minister accepted, and then the architect recommended Takashima as the best man to build it. He gave the architect a thousand ryo for his trouble, including the plan, and between them they made a good thing out of the transaction. This contract proved a great advertisement for the firm, and after that most foreigners let their contracts to Takashima. His credit was now unlimited, so that he was in a position to undertake any contract, however extensive.

The action of the Manchester City Surveyor in giving a week's notice to leave to an employee described as a temporary member of his staff, is to form the subject of an inquiry at a special meeting of the Town Hall Committee to be held next week. The City Surveyor states that in consequence of the Corporation improvement and town-planning schemes having been stopped by the Treasury, there is no work for some of the outdoor employees of the department, and that they will have to be discharged. It is understood that the allegation of the employee who has been given notice, and who, it is said, has appealed to the Town Hall Committee, is that he received notice to leave because he would not join the Army. There are reports that another employee of the department has also appealed to the Town Hall Committee and other authorities on similar grounds. The committee on Wednesday considered the appeal or appeals and the general action of the City Surveyor in recruiting from his department, with the consent of the Lord Mayor, and decided to adjourn the matter until next week. The City Surveyor has taken up a decided attitude on the subject, and on Wednesday said that if the men who had been discharged were reinstated the Corporation would have to get a new City Surveyor. It was not true, he added, that men had been discharged for not enlisting; but when he made a selection among them for retention he favoured those who were physically unfit for military service.

REVOLVING SHUTTERS, SHOP-FRONTS, AND GATES.

The old-established firm of Messrs. S. W. Francis and Co., Ltd., 64 to 70, Gray's Inn-road, W.C., is so well known to the great majority of our readers as the pioneers and leading makers of their specialities, that we need do little more than remind such that a new edition of the firm's illustrated catalogue is issued embracing the fullest details of rolling shutters in steel or wood, metal shop-fronts and name-plates, in brass, bronze, metal, or nickel silver, spring roller-blinds for inside or outside use, collapsible steel gates, wrought-iron grilles, plate-glass fascias, etc.

Architects and builders—and there still seem to be a few of both who are not aware of, or who ignore, the advantages secured by a proper choice of the various positions in which revolving shutters and spring sun-blinds can be fixed—will find a series of most useful illustrations on page 4; while the views of various well-known shops where they may be seen in use will enable any to appreciate the addition which good adjustment, with adequate provision for working, affords to a good elevation, sometimes marred by neglect or ignorance of possibilities.

Much the same may be said with regard to collapsible and extending gates, all of which Messrs. Francis and Co. will make faithfully to the architect's designs, which will as certainly be facilitated by the examples illustrated. Projecting swing-signs are another speciality of the firm, while for fascias, stall-plates, and sash-bars its reputation is unsurpassed, and is maintained by the promptest utilisation of new ideas worth adoption, as the very numerous illustrations bear witness, and the long and always increasing list of buildings at home and abroad where its specialities have been used.

Premises thirteen stories in height are about to be erected at the corner of Seventeenth and Walnut streets, Philadelphia, from plans by Mr. Frederick W. Webber, architect, of Morris Building, in that city. The estimated outlay is 750,000dol.

Acting on the request of the Road Board, the Somerset County Council have decided not to carry out any re-surfacing improvements at present, with the exception of the Bath and Bristol main road in the Keynsham rural district, which it is proposed to strengthen and surface with tarmac at a total cost of £2,191. Of this sum £747 will be repaid by the Road Board.

An improvement of Langholm Parish Church is at present in progress. The church is in the Early English style, was built by the Duke of Buccleuch in 1845 for the parishioners, and seats over a thousand. Its seats, of straight-backed character, had become old-fashioned, and the congregation are having them remodelled after designs and specifications by Mr. P. Macgregor Chalmers, architect, Glasgow. The wood of the old seats is being utilised, as it is in excellent preservation.

At a special meeting, on Friday, of the corporation of Kidderminster, a letter was received from the Local Government Board approving the scheme of Messrs. Wilcocks and Rakes, engineers, for the sewerage of the added areas, and for additions to the works at the sewage-farm, adding that under ordinary circumstances the Board would have sanctioned the necessary loan of £31,000, but they did not propose to issue sanction for the loan at present. They suggested certain detailed alterations in the scheme. The letter was referred to a joint committee.

In his annual address, on Friday, to the members of the urban district council of Llandudno, the chairman said that several important public improvements had been necessarily and wisely deferred till the end of the war; but during his year of office the council had purchased land for a golf-links, and the first nine holes of the course had been completed. Queen's-road, one of the routes out of the town, had been widened. Sixteen additional workmen's dwellings were in progress, which would increase the investment of the council in such property to £18,000. The new road from Llandudno to Colwyn Bay was being carried out, to the advantage of both towns, and a further portion of the improvement scheme in the Happy Valley had been completed.

OBITUARY.

The death took place on Wednesday week at West Haddon, Staffs, of Mr. Charles Manton, architect, formerly of Chapel Ash, Wolverhampton. The deceased, who was 94 years of age, carried on practice in the town from 1848 until a few years ago, when he retired and removed to West Haddon. For a long period he was an active member of the Freemasons' Lodge of Honour, No. 526.

Mr. Henry Montagu Whitehead, Student, R.I.B.A., and second lieutenant 4th Battalion East Surrey Regiment, was, we regret to learn, killed in action on April 14. Mr. Whitehead, who was 24 years of age, was the second son of Mr. Henry H. Whitehead, of Boston-road, Brentford. Having passed through the four-years' course of the A.A. School of Architecture, he was exempted from the Intermediate Examination and was admitted Student R.I.B.A. in December, 1913. He was a pupil, and afterwards assistant, with Mr. W. A. Forsyth, F.R.I.B.A., and was subsequently in the office of Mr. W. H. Harrison, F.R.I.B.A.

The death is announced as having taken place on the 24th inst., at Flowton, Turramurra, Australia, of Mr. Frederick Eccleston Du Faur, President of the National Art Gallery of New South Wales. He was born in London in 1832, and educated at Harrow. He did much in Australia to foster a national regard for art, and was an early member of the Council of the New South Wales Academy of Arts, which originated the National Art Gallery in 1874, when Mr. Du Faur was appointed one of the trustees. He had been president of the Gallery since 1892.

M. Charles-Rene de Paul de Saint-Marceaux, the well-known French sculptor, died suddenly in Paris on Saturday, following an attack of septic influenza. The deceased, who was in his seventieth year, was a native of Rheims. In 1872 he submitted to the Salon a bronze statue of the Abbé Miroy, who was shot by the Prussians at Rheims during the Franco-German War. This was rejected on political grounds, and was later erected over the abbé's grave. Other well-known works are the statues in Paris of Alphonse Daudet and Alexandre Dumas the younger. His well-placed "Génie gardent le secret de la Tombe" is in the Paris Luxembourg. "Arlequin" has had numberless admirers since it was exhibited in 1880. The original plaster model was given by M. de Saint-Marceaux to the museum of his native town. Other well-known works by him are a bronze bust of "Gabriel d'Annunzio," the "Image de nos Destinies," and his big monument, "L'Union Rostate Universelle," executed at Berne.

A Bill the purpose of which is the preservation of a uniform skyline in Albany has been introduced in the New York State Legislature. By its provisions the heights of buildings in certain districts of the city are limited to 80ft.

Our Boys' Hall, Manor-street, Belfast, has been reopened after additions carried out from plans by Mr. R. B. Henry, hon. architect, at a cost of about £1,306, the contractor being Mr. William Dowling, Cromwell-road, Belfast.

From lists published by the Royal Institute of British Architects it appears that the total number of the men connected with that body who have up to the present time joined the military and naval forces for the period of the war is: 37 Fellows, 242 Associates, 100 Licentiates, 1 Hon. Associate, and 133 students.

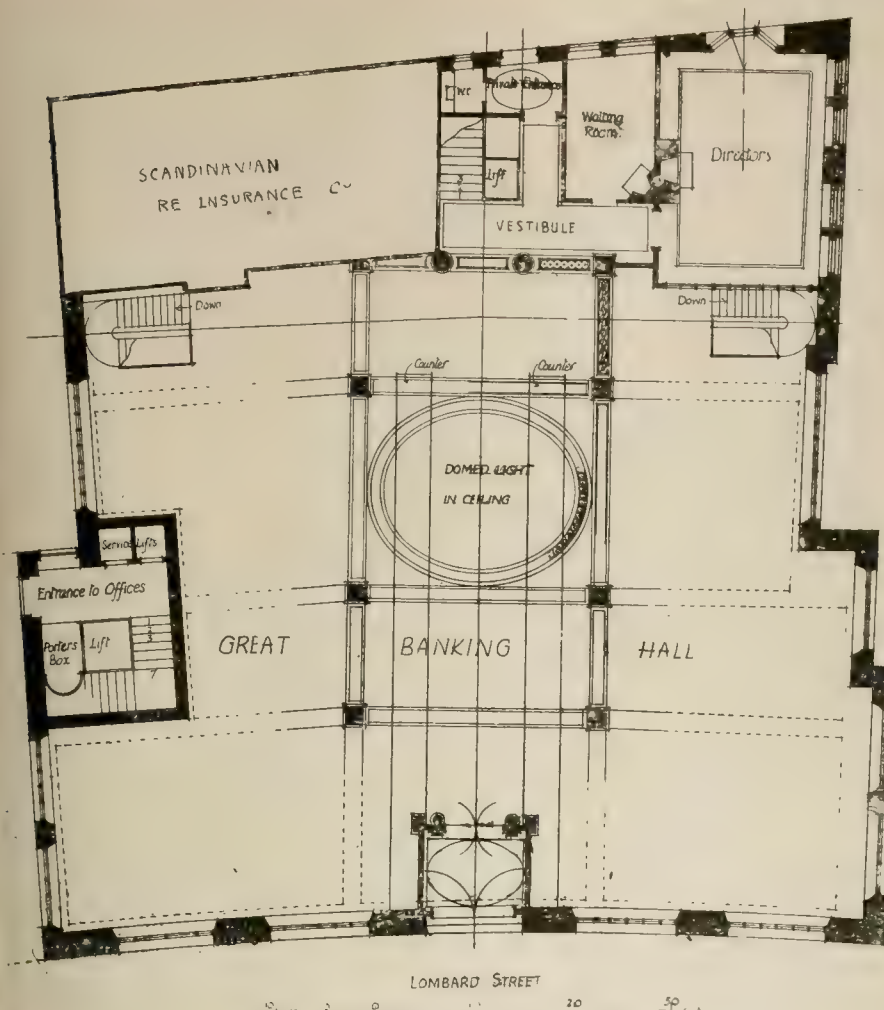
Out of thirty-two applicants, Mr. Richard Robertson, Kinghorn, has been appointed burgh surveyor at Tranent, at a salary of £104, in place of Mr. William Dunbar, appointed assistant surveyor at Kilmarnock. Mr. Robertson has also been appointed park-keeper at Tranent, in place of Mr. Richard Scott, resigned.

In order to free the Bagthorpe workhouse infirmary for use as a military hospital, Nottingham City Council have agreed to receive the tuberculous patients from the infirmary into their Bagthorpe isolation hospital. The Local Government Board have provisionally approved of plans for additional open-air wards at the hospital with accommodation for fifty patients, and have intimated their readiness to entertain an application for a loan. The cost of the permanent buildings is estimated at £4,500.

Building Intelligence.

ACTON.—Last Saturday the Bishop of London consecrated the new church of St. Peter, Acton Green, W. The building is very plain indeed outside, with a flatly roofed chapel on the north side, next Southfield-road, the nave and choir being of one height and without any structural division or arch inside. Ferro-concrete has been freely used, and the scheme is based in an elementary way upon the idea of a Romanesque basilica carried out in stock brickwork, with two rows of columns enclosing iron stanchions concreted and cemented into a circular form of shafts surmounted by cushion caps painted after the manner of Byzantine mosaic enrichments. These piers support a range of small red brick semi-circular arches in $4\frac{1}{2}$ rings inserted on very big and deep abaci. The church is described in the published particulars as being reminiscent of the great Theodosian basilica of St. Paul without the Walls. Everyone in this new church can obtain a free view of the altar and pulpit; the former is under a baldachin, with a pediment in white and gilt, with very Late Rococo or Baroque enrichments attached and sparingly used. The effect is very Roman in treatment, and the same may be said of the Classic altarpiece in the Lady-chapel, which has a hidden ceiling yellow light above, giving a dramatic result familiar in the old Roman Catholic Church in Moorfields pulled down a few years ago. There is a narthex, with a gallery over, at the west end for the choir and organ. Spaciousness is the chief characteristic of the building, which is suited to the neighbourhood, consisting as it does of small houses and flats tenanted by working people. The apse has a domed ceiling coloured blue, with gilded stars, and carefully planned black-and-white marble paving to the sanctuary adds greatly to the dignity of the church. The altarpiece was formerly in the chapel of Montague House, and its Renaissance style befits the set of massive gilt candlesticks standing close together upon the retable, behind which there is a passageway for access when lighting these tapers. The oak stalls and sedilia came from the demolished Grosvenor Chapel, South Audley-street, and they much help to furnish the chancel very suitably. The font and pulpit at one time were in All Saints Church, Gordon-square, the sale of which building helped to supply the funds for erecting this new church at Acton, the ample site of which is certainly worthy of comment, considering that £8,000 only was available for everything. The west end has a mosaic tympanum over the central doorway, adding dignity to an otherwise plain façade. The side aisles are used only as passageways. To provide the marble paving deal had to be employed for the woodwork and doors, the ceilings also being boarded, and the structure is utilitarian. The contrast between the surrounding houses and the church is an advantage, for the severity of the latter adds some amount of dignity externally, while inside it is rather impressive. Mr. William A. Pite, F.R.I.B.A., is the architect chosen in competition.

ROCHDALE.—Two spinning-mills have just been built end to end on the Castleton estate, Rochdale, for the Tyre Yarns, Ltd., and Fabric Weavers, Ltd. Mr. Sidney Stott was the architect, and Messrs. R. and T. Hawarth, of Royds-street, Rochdale, the builders. Unlike most works of the class, they are of one story throughout, except in the general offices block. The area covered is 26,000 square feet. Each mill is in four sections, and each section is complete in itself and can be run separately. The total capacity when completed will be about 44,000 ring spindles and about 250 looms. The roofs are covered with asbestos-cement slates, and the flooring and walling is of jointless Sano material, laid in two thicknesses. The carpentry and joinery contract has been executed by Messrs. Thomas Williamson and Son, of Walpole-street, Rochdale, and the electrical work by Mr. G. L. Adams, A.I.E.E., of the same town.



MARTIN'S BANK, LOMBARD STREET, E.C.
MR. ERNEST NEWTON, A.R.A., P.R.I.B.A., Architect.

Our Illustrations.

HOUSES FOR THE STAFF OF H.H. THE MAHARAJAH HOLKAR OF INDORE. SHIRPUR PALACE, INDIA.

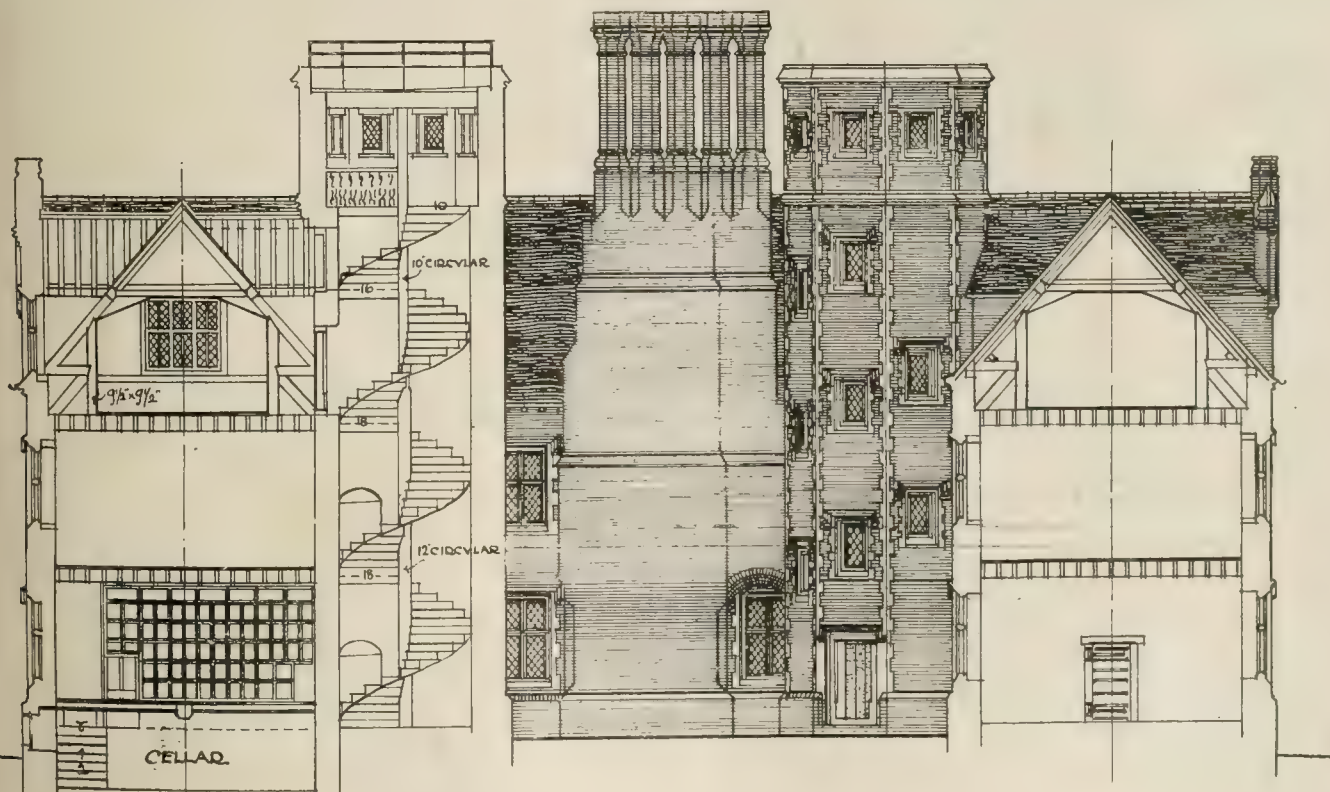
We reproduce the drawing now in the Royal Academy of residences designed by Messrs. Sir Ernest George and Yeates for the aides-de-camp and others of the staff of H.H. the Maharajah Holkar, in connection with the Shirpur Palace at Indore, by those architects. The walls are generally of brick or rubble, with plastered face, the arcades and other portions being of stone. The floors are of paving upon brick arches between joists. The low-pitched roofs, with wide-spreading eaves are of tiles similar to those of Italy or Spain. Plans of the three buildings represented are included in our illustration as given in the original drawing to explain the arrangements adopted.

MARTIN'S BANK, LOMBARD STREET.

We give the elevation of this new bank from the original drawing now on view at the Royal Academy Exhibition, together with a copy of the ground-plan. The upper floors are planned as offices and the top floor will be used as a restaurant. A side separate entrance, with lifts both for passengers and service, is arranged, and a porter's box will serve for the janitor in charge. The maximum of light is insured with the addition of a top light in the ceiling of the great banking hall. The directors' room is placed at the rear. Mr. Ernest Newton, A.R.A., P.R.I.B.A., is the architect.

CHURCH OF ST. FAITH, EDMONTON, CANADA.

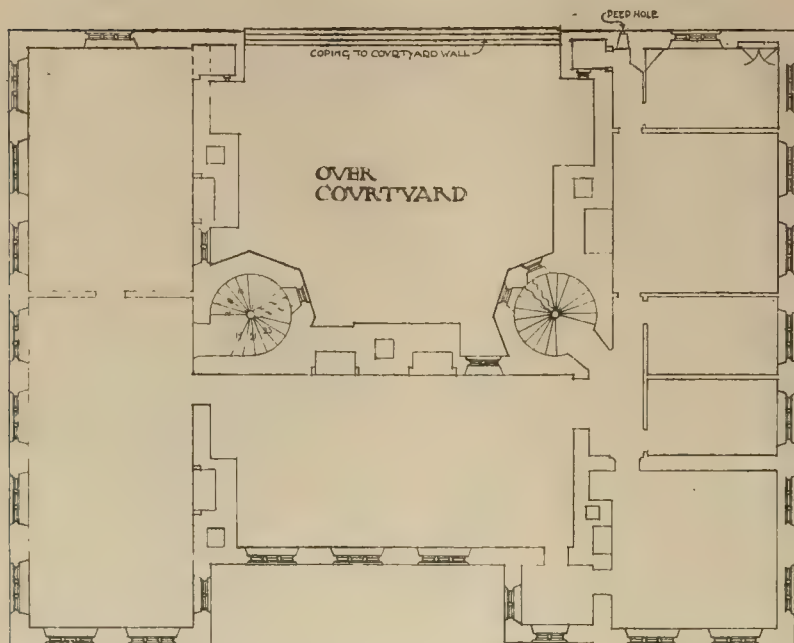
This new church is to replace temporary buildings erected for the mission there. These drawings of the design, by Sir Thomas G. Jackson, Bt., R.A., are in the Royal Academy Exhibition this year. The building consists of a church to seat 1,000, with a lower story containing a large hall, classrooms, and vestries, and a chapel accessible from outside independently of the church, with which, however, it communicates by a



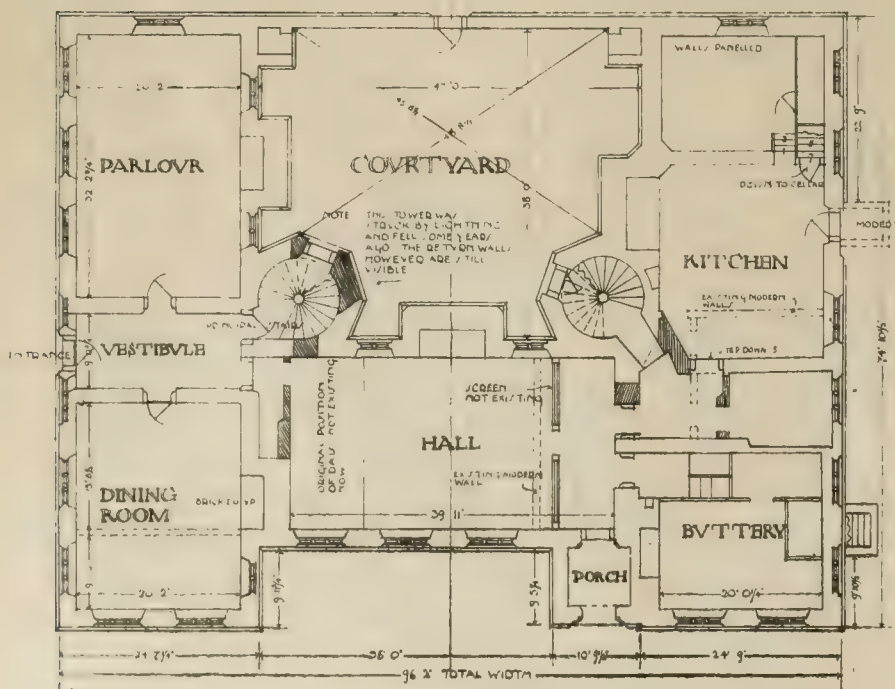
LONGITUDINAL SECTION

EASTBURY MANOR HOUSE, BARKING, ESSEX. - Measured and Drawn by Mr. HUBERT V. C. CURTIS, Architect.

EASTBURY MANOR HOUSE BARKING ESSEX



FIRST FLOOR PLAN



GROUND PLAN

Measured and Drawn by Mr. HUBERT V. C. CURTIS, Architect.

staircase. The walls are intended to be of cement-concrete, with dressings of red brick, of the plainest kind, skilled labour being not easily attainable in the district, and the only wrought stonework, besides the plain dressings of the interior piers, is in the east window, and the windows of the small chapel. The roofs would be of timber covered with shingles. A tower at the west end stands detached from the main block, except for a passage of communication with the basement, as shown by the accompanying plans.

EASTBURY MANOR HOUSE, BARKING, ESSEX.

This well-known and very fine example of Early Renaissance architecture is said to have been built during the reign of Queen Elizabeth, and its stately mass is seen standing some distance back from the Old Tilbury-road, about one mile east of Barking. The southern façade faces the Thames, and the towers command an extensive view over the marshes. The house was planned and constructed apparently in 10ft. to 11ft. bays,

each comprising a window, with the intermediate breasts of walling supporting the huge binders, together with the roof-principals immediately over. Externally, the structure now presents a sadly dilapidated appearance, and much of the charming brickwork is in a state of decay. At one time it was interlaced with a diagonal pattern in grey headers; but this work is hardly visible through the condition into which the premises have been allowed to fall. The present tower contains the original winding staircase, with its steps hewn in the solid from the tree, and so ingeniously are they cut, that a continuous soffit is shown beneath converging to a central post, which extends to the top of the tower; a handrail cleverly cut in the brickwork can be seen in the remains of the other tower. At one time the gables had pinnacles at the base and apex; but these have now disappeared. It is unfortunate that so little of the original interior fittings remain; in places the oak floorings have entirely vanished, whilst in others partitions and ceilings were removed bodily. Some of the walls appear to have been painted in fresco. There is a fireplace of interest in the east wing; but the only panelling is in the room south of the kitchen, and is of an unpretentious character. To the east of the house a portion of the garden is enclosed with a brick wall, having a gateway exactly opposite to the garden entrance, and has curious little peep-holes on each side. These drawings were prepared for the Evening Travelling Studentship, 1911, of the Architectural Association, and have been placed at our disposal by the courtesy of Mr. Herbert V. C. Curtis, who made a monograph of the building. At an early date we propose to reproduce some of his excellent sheets of details of the mansion.

The Darent Valley Drainage Board, at their quarterly meeting on Monday, increased the salary of Mr. S. W. Gibson, their surveyor, by £10 a year.

An item of 135,000dol. has been replaced in the estimates by the Toronto Board of Education for the administration building which is to be erected on College-street, Toronto.

The foundation-stones of the new halls erected in Parker-street, Whiteinch, N.B., by the Salvation Army were laid on Saturday afternoon. The halls are being built at a cost of £2,700, and accommodation will be provided for 310 adults and 350 children.

The Bideford Rural District Council has completed the erection of ten cottages under a housing scheme. There were many applicants for the houses; but the highest rent that could be obtained was 3s. 6d. per week inclusive—a return which is not self-supporting.

At Hamilton, Ontario, the local architects and engineers have formed a club, with the idea of erecting quarters in the near future. The following have been elected to office in the new club: Mr. E. P. Colman, president; Mr. W. Stewart, first vice-president; Mr. J. J. McKay, second vice-president; Mr. E. F. Kelly, secretary-treasurer; and Mr. Lawrence Munro, director.

The Local Government Board have intimated their approval of the scheme for sewerage the new areas in the extended borough of Kidderminster, and for the new work on the sewage-farm, which has been the subject of much discussion at Kidderminster, Stourport, and Bewdley. The approval is subject to certain minor amendments. The amount of money necessary to carry out the scheme is about £31,000, and the Local Government Board intimate that sanction for the loan cannot be given at present, owing to the war.

In the United States, competition for contracts is exceedingly keen this season. The eagerness of the larger contractors for work was well illustrated at the letting of the Pennsylvania concrete viaduct over the Susquehanna River at Harrisburg, Pa. The estimated cost of this bridge exceeded the highest of thirty-eight bids by more than 100,000dol., and the lowest by nearly 500,000dol. There were fifty-four sets of plans out for bidding. The principal item of the contract was 56,000 cubic yards of concrete, for which the low bid of 4.73dol. per cubic yard was received. The lowest ten bids on this item were below 6dol. per cubic yard, and all but one bid were below 10dol. per cubic yard.

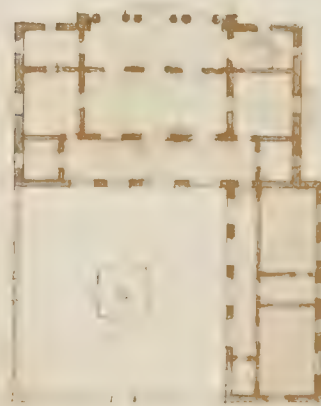
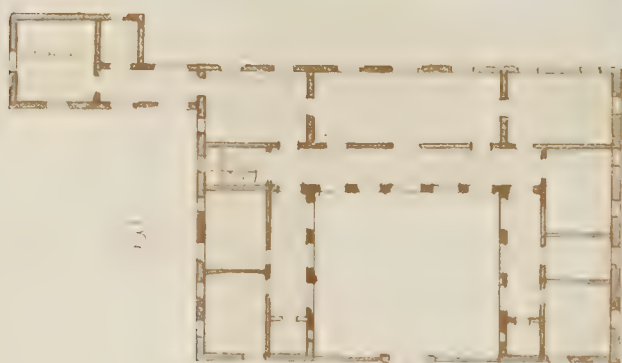




HOUSES FOR THE STAFF OF H.H. THE MAHARAJAH HOLKAR OF INDORE, SERP



DES FOR THE STAFF OF
HARAJAH HOLKAR OF INDORE.
BY A. B. YEATES
ARCHITECT.





THE BUILDING NEWS
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ERNEST NEWTON A.R.A.
ARCHT.
1 KAYMAKOR BUILDING.
GRAYS HILL A.C. 1884.

W. J. V. DEL.

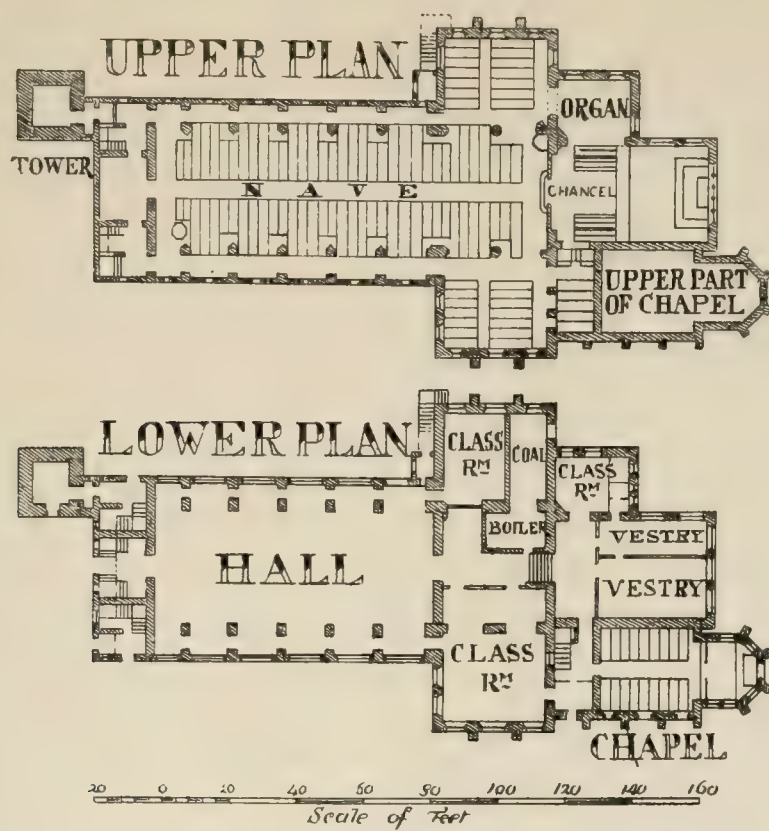
MARTIN'S BANK, LOMBARD STREET, E.C. 4-Mt. ERNEST NEWTON, A.R.A., P.R.I.B.A., Architect.



ST FAITH'S, EDMONTON
CANADA.

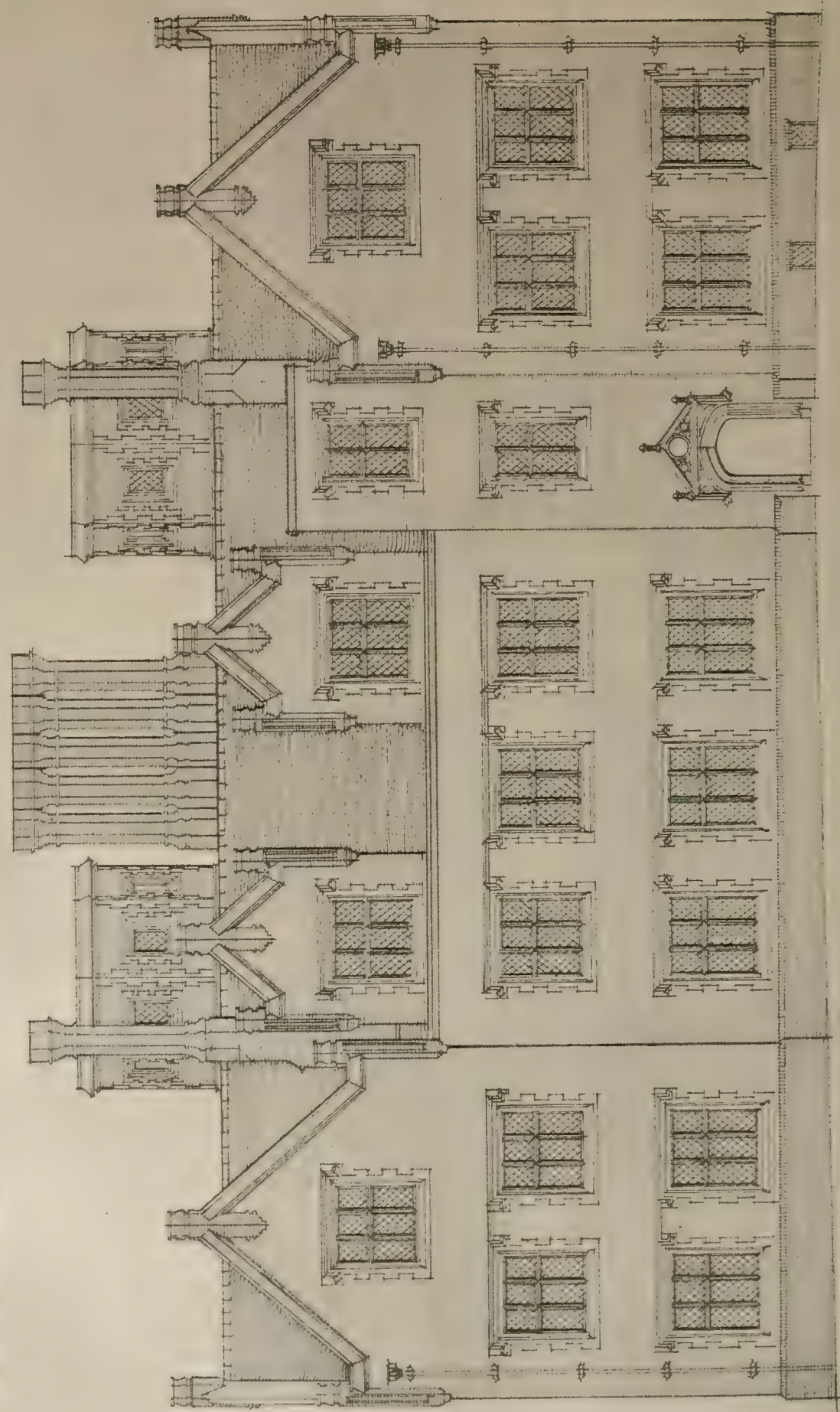


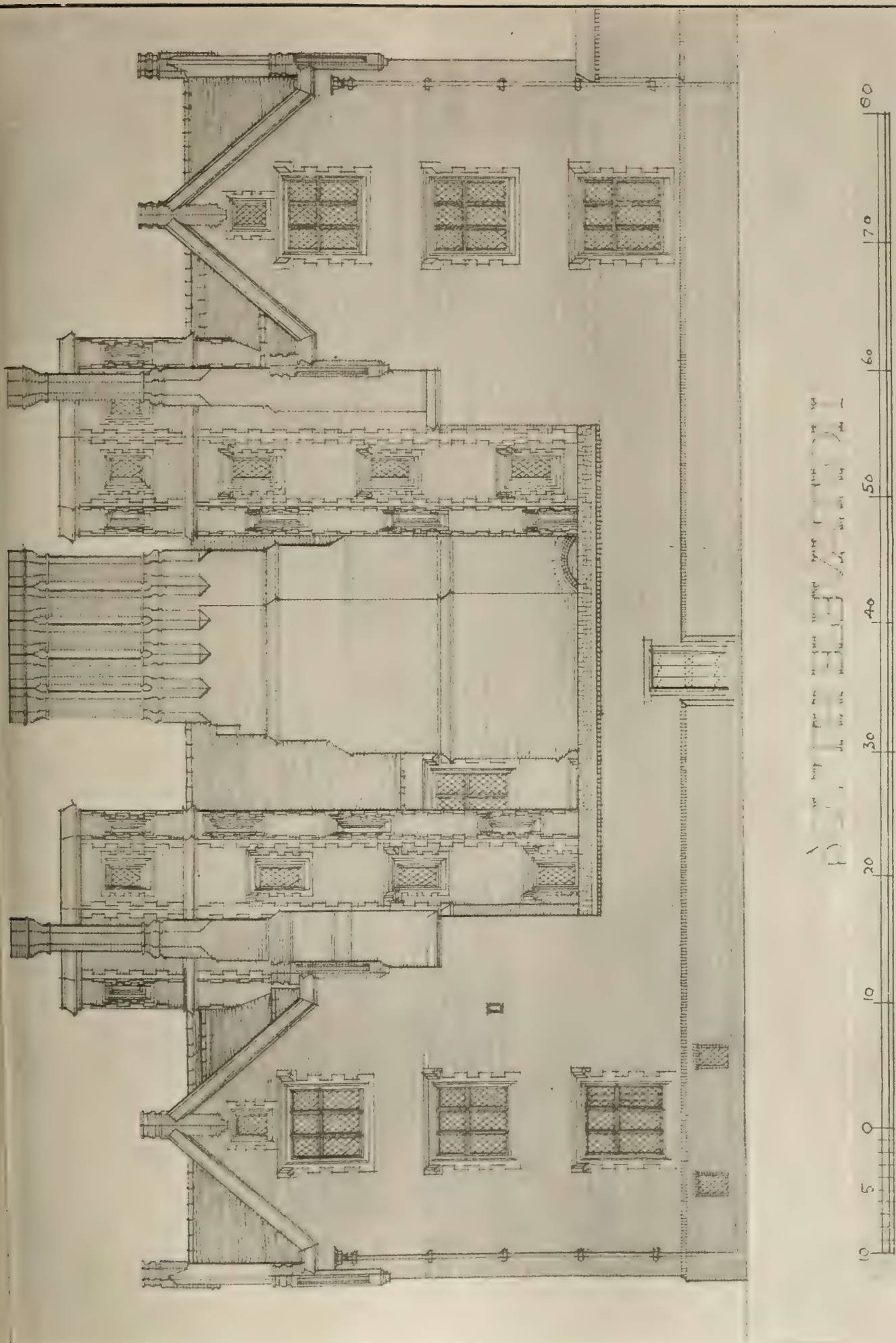
ST. FAITH'S CHURCH, EDMONTON, CANADA





FACADE





EASTBURY MANOR HOUSE, BARKING, ESSEX.—Measured and Drawn by Mr. HUBERT V. C. CURTIS, Architect.

COMPETITIONS.

BRADFORD.—The competition for the central area street re-planning scheme in the city of Bradford is to be assessed by Mr. Reginald Blomfield, R.A., who has this week been engaged at Bradford in judging and considering the 54 sets of plans sent in by architects in accordance with the advertised conditions issued by the Corporation.

ISTRANA, ALWAR STATE.—Mr. G. K. Trilokekar, of the firm of Narasimham and Trilokekar, architects, Bombay, is the winner in the competition for a country residence at Itrana, for the Maharaja Saheb of Alwar, to be designed in the Hindu style, and to cost Rs. 4 lakhs. Mr. Trilokekar has not only won the premium of Rs 1,500, but has been commissioned to supervise the construction of the building to completion.

ROSYTH.—On the recommendation of Mr. J. A. Carfrae, architect, Edinburgh, Dunfermline School Board selected on Friday plans prepared by Mr. R. H. Motion, architect, Dunfermline, for a school to be erected at Rosyth, for which the Board have fenced ground from the Admiralty two and a half acres in extent. A premium of £20 was awarded to Mr. James T. Scobie, architect, Dunfermline, whose plans were adjudicated next in order of merit. Mr. Scobie also shared a second premium of £15 with Mr. David Beveridge, architect, Dunfermline. Calculated upon normal costs of building materials, the school is estimated to cost about £16,000, and will provide accommodation for 1,000 pupils. The Board at a recent meeting adopted a resolution deciding to postpone the construction of buildings as far as possible. It may be found expedient, however, to waive that resolution so far as Rosyth is concerned.

SOUTHEND-ON-SEA.—This tuberculosis hospital competition has been settled, and Mr. F. Whitmore, consulting architect to the Essex County Council, the Borough Engineer, and the Medical Officer, reported as follows:—We beg to report that 17 sets of designs were submitted in the above competition. In the first instance, each of us independently examined the designs, and later we met upon several occasions in consultation. In arriving at a decision as to the merits of the respective designs, we have borne in mind the question of future extensions and have had regard, in the main, to the following considerations—viz.: (1) Position of the several blocks of buildings on the site, with a view to the latter being used to the best advantage. (2) The nature of the accommodation provided in the ward pavilions for patients. (3) The general arrangements with a view to the efficient and economical working of the institution. Each of us independently came to the conclusion that designs Nos. 16 and 7 were the best submitted, and, after careful consideration and consultation, we arrived unanimously at the conclusion that design No. 16 should be awarded the first premium, and that design No. 7 should be awarded the second premium. We are of opinion that design No. 6 should be awarded the third premium. Design No. 16 is a very carefully prepared and well thought out scheme. The buildings are grouped at the extreme northern portion of the site. The administration block lies between the two ward pavilions, all facing south. The dining-hall and kitchen block lies behind and is connected with the administration block and pavilions by two covered ways. The laundry and disinfecting block is in the rear. The future extension shows, south of the pavilion to be erected forthwith, a pavilion with further accommodation for adults and special provision for children. In design No. 7 the buildings are placed approximately halfway down the site, with the administration block on the west side facing west, and the ward pavilions on the south side, with kitchen block at the rear, and connected by covered ways. In future extensions, an additional ward pavilion is proposed north of the kitchen block. We recommend that all the designs be placed on public view, and that a copy of this report be sent to each of the competitors when their

names are known. Designs No. 16 and No. 7 are, in our opinion, the designs which require the least modification to secure the type of institution most suitable for local conditions. Having regard to the position on the site and the grouping of the buildings, we are of opinion that design No. 16 is the more suitable for adoption, although certain modifications in detail will be necessary. We therefore recommend that the author be appointed architect, subject to such condition as the committee may consider desirable. At a later meeting the committee again considered the joint reports made by the assessors, and it was resolved to recommend that the committee be authorised to appoint the author of design No. 16 architect for the erection of the proposed building, subject to such conditions as they may consider desirable. The envelope containing the name of the designer of No. 16 was then opened by Councillor Nerney, who announced that the successful architect was Mr. Percy Brockbank, of County Chambers, Southend. The winners of the second and third premiums were Mr. H. Lord, Deansgate, Manchester, and Mr. J. J. Green, Liverpool. This competition was barred by the R.I.B.A., and neither of the premiated architects' names is in the Institute Kalendar for this year.

The National Road Exhibition, which has been organised by the County Councils Association, will be formally opened on June 25 by Mr. Herbert Samuel, President of the Local Government Board.

The National Schools in Fishamble-street, Dublin, are being rebuilt from plans by Mr. J. F. Fuller, architect, Great Brunswick-street, in that city. They will be two stories in height, and built of stock bricks, with slated roofs. Messrs. Farmer Brothers, of Nottingham-street, are the builders.

The Mayoress of Ealing on Saturday opened the children's ward of the Ealing King Edward Memorial Hospital, which has been erected by public subscription in memory of the late Mr. Charles Jones, who was for fifty years engineer and surveyor to the local authority, and at the time of his death mayor-designate of the borough.

At a special meeting of Irvine Town Council, Mr. Joseph Weekes, burgh surveyor and sanitary inspector, Newport, Fife, was appointed master of works for Irvine. There were seventy-six applicants, and the final vote lay between Mr. Logan Weir, of Hamilton, and Mr. Weekes. The latter received the appointment by the chairman's casting vote.

A letter has been received by Bilston Urban District Council from the Local Government Board suggesting that the question of raising a loan of £13,733 for improving the Holyhead road should be postponed, as the Board were unable to comply with the request to sanction the loan. It has been decided to reply that the contracts for the work have been entered into, and large quantities of the material required had been delivered.

At the annual meeting of the heritors of Dunfermline, on Friday, it was decided to make provision for the estimates for continuing with the restoration of the stonework of the Abbey Church. It was reported that experiments had recently been made, in presence of the burgh engineer, in regard to the fire-extinguishing apparatus. While the experiments had proved satisfactory, it was agreed, as a further safeguard, that an additional hydrant be placed near the door of the north transept, and to remove a case containing various fire-extinguishing appliances from the inside to the outside of the abbey.

At Loughborough Mr. Raymond Unwin, F.R.I.B.A., held a Local Government Board inquiry on the 21st inst. into an application by the corporation for authority to prepare a scheme of town planning for some 600 acres of land lying between Mansfield-road and Nottingham-road. The town clerk, Mr. W. J. Board, explained that the land was undeveloped save for a hosiery factory and a few cottages, which would not interfere with the scheme. It was proposed to have a main arterial road, 80ft. wide, running along the Day Brook, and a 60ft. road along the bridge-path to the south of the prison. Land would be reserved for a recreation-ground or grounds and other public purposes, and Edward's-lane, part of Hucknall-road, and part of Nottingham-road would be widened.

PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTS' VISIT TO DAVID'S TOWER, EDINBURGH CASTLE.—An interesting visit was paid on Saturday afternoon by members of the Edinburgh Architectural Association and their friends to the Castle, where, under the leadership of Mr. J. Wilson Paterson, A.R.I.B.A., architect in charge of ancient monuments, Scotland, some of the famous features were pointed out. The company of ladies and gentlemen, numbering about a hundred, assembled in Queen Mary's Room, where Mr. Paterson, who was introduced by Mr. T. Forbes MacLennan, A.R.I.B.A., president of the society, explained a number of old plans of the Castle. The company afterwards inspected the plans, which date from 1710 to 1822, and which are of particular interest in view of the fact that they record the changes during that period, while they show various schemes for the better protection of the Castle, some of which, however, were never carried out. Mr. Paterson gave an interesting summary of the various historical events associated with the Castle. Plans of a proposed new chapel school, incorporating Queen Margaret's Chapel, were also on view. These were designed in the Norman style by Mr. R. W. Billings, at one time architect to H.M. Office of Works. Drawings of recent discoveries were inspected, and thereafter the party paid a visit to the cellar which led to the discovery of David's Tower, and also to the tower itself, in which interest in the afternoon's excursion centred. In small parties the company was taken down to the foot of the tower, where the results of recent excavations were seen. The dungeon below Queen Mary's apartments, the Argyll Dungeon, Casemates, Devil's Elbow, Banqueting Hall, and service stair adjoining, vaults where French prisoners were confined, and Queen Margaret's Chapel figured in the afternoon's programme.

EDINBURGH ARCHITECTURAL ASSOCIATION.—The annual general meeting of the Edinburgh Architectural Association was held on Wednesday evening last in the rooms of the association at 117, George-street, Edinburgh, Mr. T. Forbes MacLennan, A.R.I.B.A., the president, in the chair. The reports of the committee of management, the council, librarian, convener of the publication committee, and the war committee were submitted and approved. The following office-bearers were re-elected: President: T. Forbes MacLennan, A.R.I.B.A. Past president, A. Lorne Campbell, F.R.I.B.A. Vice-presidents: John Wilson, F.R.I.B.A., and T. Aikman Swan, A.R.I.B.A. Hon. secretary: James Kerr, F.F.S., 122, George-street. Hon. treasurer: W. G. Walker, C.A. Hon. librarian: James A. Arnott. The President, in the course of his address, gave a brief review of the session's work. He referred to several matters which had been engaging the attention of the council, and which, he said, were typical of the difficulties of the independent architect, whose province was being invaded by the universal provider and the alarming growth of officialdom. If architects cheapened themselves—and apparently the practice was not confined to those who were struggling at the bottom of the ladder—how could they expect to receive adequate remuneration for sketch plans which they were asked to prepare, and which were often the product of many years' training and hard-won skill and experience? The Royal Institute of British Architects had recently called the attention of the Council to the failure of municipalities generally to take advantage of architectural advice at the initial stages of town-planning schemes. Mr. MacLennan remarked that a striking example was the laying out of the site of the old slaughter-houses in Edinburgh. Was it possible that, after all the conferences on town-planning and the deputations, the costly blunders of the past were to be repeated? A discussion followed.

INSTITUTION OF CIVIL ENGINEERS.—The council of the Institution of Civil Engineers have made the follow-

ing awards for papers read and discussed during the session 1914-15:—Telford Gold Medal to Mr. A. L. Bell (Rosyth), Telford Premiums to Mr. C. W. Anderson (Chakradharpur, India), Sir Thomas Mason (Glasgow), Dr. H. F. Parshall (London), and Mr. H. E. Yerbury (Sheffield), and the Crampton Prize to Mr. F. D. Evans (Kuala Lumpur, F.M.S.). The awards for papers to be published in the "Proceedings" without discussion will be announced later.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.—The fifty-second annual meeting was held on Tuesday, April 20. The chair was taken by the President, Mr. Harry Gill, M.S.A. The council reported that they had to record the resignation of Mr. Herbert Walker, a past president, and the loss by death of Mr. Arthur Marshall, also a past president, and Mr. H. Whittaker, an Associate. The total membership was now 125, an increase of five over last year. The privilege of honorary membership, until peace is declared, has been granted to Mr. Van Reybrouck, a Belgian architect, at present a refugee in Nottingham. The council have been in communication from time to time with the master builders, plumbers, and heating engineers. Six meetings have been held during the past session, including a lecture on town planning by Mr. Raymond Unwin, F.R.I.B.A. This meeting was arranged as a popular lecture at the University College, and the surveyors and members of the Town Councils of Nottingham, Lincoln, Derby, and other local authorities attended. The council are proud to state that 24 members are at present on active service serving their king and country. In addition to a town-planning committee, an architects' war emergency committee has been appointed. The financial position of the society is very satisfactory, the year's working showing a substantial balance in hand. Owing to the majority of the junior members being with the colours, no meetings of the Designing Club have been held. The prize-winners are:—For measured drawings: First prize, Mr. D. E. Knight (now a sapper in the Royal Engineers); second prize, Mr. K. V. Weston (O.T.C.). For Vice-President's sketching prize: Mr. K. V. Weston (O.T.C.). The following officers were elected:—President: Mr. Harry Gill, M.S.A. Vice-president: Mr. H. G. Watkins, A.R.I.B.A. Council: Messrs. P. H. Currey, R. Evans, W. R. Gleave, A. E. Heazell, T. H. Thorpe, E. R. Sutton, H. P. Gill, C. E. Howitt, R. Spencer. Hon. secretary and treasurer: Mr. F. M. Royle. Hon. librarian: Mr. R. Spencer. Designing Club hon. secretary: Mr. J. Woollatt. Auditors: Messrs. F. W. Gregory and R. Spencer. A vote of thanks was accorded the retiring officers. The meeting also discussed suggestions for the better laying of streets and buildings.

ROADS IMPROVEMENT ASSOCIATION.—The annual meeting of this association was held on Thursday at the Institution of Civil Engineers, Great George-street, S.W., the chair being occupied by the Hon. Arthur Stanley, M.P. The annual report stated: "Although its activities will be somewhat restricted during the war, everything necessary is being done to maintain the organisation and machinery of the association in an efficient state. This is very essential when it is borne in mind that owing to the abnormal circumstances now being experienced—the unusually unfavourable weather, military activities, shortage of labour, etc.—the roads generally are deteriorating. It is consequently necessary that the association should carefully watch the prevailing economic conditions and seek and urge remedies at the right time. Unless this is done the community at large will be saddled with greatly increased charges, consequent upon this deferment of road repairs, in addition to bearing the burden of unsatisfactory road surfaces." Mr. Robert Todd, chairman of the council of the association, moved the adoption of the report, which was seconded by Mr. Joynton-Hicks, M.P., who observed that at present they could not

expect to embark on any of the large schemes for which many of them had hoped, but they could go on pressing for the gradual widening and improvement of their roads.

CHIPS.

The annual meeting of the Hampshire Field Club and Archaeological Society was held at the County Council Chamber, Winchester, yesterday (Thursday) afternoon.

At the annual vestry meeting of St. Saviour's Church, Great Moor, Stockport, a resolution was passed in favour of building a new church. The work is to be taken in hand as soon as possible.

Mr. J. F. Wardle, surveyor, sanitary inspector, and waterworks engineer to the Warkworth Urban District Council, has been appointed surveyor to the Bolsover Urban District Council.

To the church at Harold's Cross, Dublin, a belfry has just been added from designs by Mr. Vivian Smythe. It hangs a bell weighing over half a ton, the gift of Mr. A. W. Spence, principal of the firm of Messrs. William Spence and Son, bellfounders, Cork-street, Dublin.

The death is announced, at Blackpool, of Mr. John Edward Stafford, borough engineer at Burnley from 1882 to 1888. On leaving the service of the corporation Mr. Stafford went into private practice as consulting engineer. He designed the Victoria Pier at Fleetwood, and carried out extensive works for the Great Western Railway Company and other authorities.

We are glad to learn that Mr. P. Cart de Lafontaine, son of the junior Sheriff for the City of London, late editor of the "Architectural Association Journal," and captain in the 4th London Regiment, Lahore Division Indian Expeditionary Force, who went all through the battle of Neuve Chapelle, escaped with nothing worse than a bullet through his puttees.

Subscribed for by members of both Houses of Parliament, a medallion portrait in white marble of the late Right Hon. Alfred Lyttelton (1857-1913) is to be placed in St. Margaret's, Westminster, to commemorate the life and work of that statesman. The inscription has been written by the Master of Trinity College, Cambridge. The medallion has been executed by Sir W. Goscombe John.

At the close of business at the last meeting of the rural district council of Uttroxtor the chairman formally presented their surveyor and sanitary inspector, Mr. W. Walker, with a clock on the occasion of his marriage, and in doing so referred to the excellent way in which he had recently carried out the building of highway bridges at Newborough and at Kingstone, in the district.

The Bishop of Taunton, at St. Paul's Church, Weston-super-Mare, on Sunday, dedicated an alabaster pulpit which has been presented to that church as a memorial to the late Mr. Farnham Budgett. The body of the structure is of coloured stone, while the figures in the panels are white. The centre panel symbolises the Sermon on the Mount, while the other niches are occupied by figures of St. Paul, St. Andrew, St. Peter, and St. Stephen; while on the wall flanking the pulpit-stands the figure of an angel bearing an inscribed roll.

Adjoining their carriage-works at High Meads, Stratford, E., the Great Eastern Railway Company have built a new paint-shop immediately to the north of the running-sheds. Two bays of the shop are completed and in use; but ultimately the shop and stores will comprise four bays, each 42ft. wide, covering an area of 74,000sq.ft. At the same spot an engine repair-shop is also in hand, which will consist of three bays, each 50ft. wide and 480ft. long. The centre bay will be used as serving-shops and stores, whilst the side bays will be equipped with pits and benches, and will be served by overhead travelling-cranes.

The pulling down of the old rectory-house adjoining the Church of St. Michael, Cornhill, E.C., and the erection of new suites of offices on the site, being now completed, the laying out of the churchyard has been commenced. Part of the area will be turfed, and the remainder, except for the pathways, adorned with flowers and shrubs. A number of tombstones formerly in St. Michael's Church and in that of St. Peter-le-Poor will be arranged around the churchyard. Subject to a faculty being obtained, the gateway near the Hong Kong and Shanghai Bank will be closed, and a new entrance made near the Jamaica Wine House.

Intercommunication.

QUESTIONS.

[13140].—**COPPER SIGN.**—I have a large copper sign with embossed lettering to clean and restore. It has been badly neglected for years, and has the appearance of either a thin coat of paint or varnish over it, as well as an incrustation of dirt. Will some reader kindly give me a suggestion how to clean and restore, and oblige?—Shinio.

[13141].—**DUST-PROOF FIREPROOF ROOF.**—I have a fireproof roof to construct, probably asbestos slates on steel angle laths. Can any reader recommend a sound and economical method of rendering same reasonably dust-proof? The roof will be about 30° pitch, with steel trusses about 8.9 centres; span 27ft.—Bran.

WATER SUPPLY AND SANITARY MATTERS.

LONDONDERRY.—A report on a scheme for new water supply has been prepared by Mr. M. A. Robinson, M.Inst.C.E., city surveyor. Mr. Robinson recommends the adoption of a scheme for bringing water from Banagher Glen, the present reservoirs being utilised. The glen lies on the south-eastern side of the road from Feeny to Dungiven, 2½ miles distant from Feeny, and 3¼ miles from Dungiven, and is the junction of the Glendra, Altnaheglish, and Finglen rivers, which here unite to form the Owenrigh, a tributary of the River Roe. On the 6,000 acres proposed to be utilised at the outset, only 100 acres are under cultivation; 5,826 acres are mountain upland. Professor Leebody reports most favourably regarding the quality of the water, and Mr. J. R. Kilroe, late of the Geological Survey staff, describes the geological conditions as most satisfactory. The city surveyor's estimate of the cost is £209,000, including filtration and the provision of an aqueduct across the Foyle.

At the recent meeting of the committee of management of the County Clare lunatic asylum, amended plans in connection with the auxiliary at Tulla were approved of. The original estimate was £15,385; this has been increased by 33 per cent.

At the recent organisation meeting of the Ohio State Architects' Association the following officers were elected: President, Mr. George U. Anderson, of Cincinnati; vice-president, Mr. C. W. Bellows, Columbus; Mr. Herbert M. Briggs, secretary and treasurer.

The foundation-stone of a Sunday school in connection with the new Baptist church at Twickenham has been formally laid. Mr. J. M. K. McKilliam is the architect, and Messrs. Eldridge and Sons, of St. Margarets, are the builders. The cost is estimated at £1,800.

The Bishop of London dedicated on Sunday the new chancel, nave, aisle, and ornaments of Hendon Parish Church. The exterior is built of brickwork, plastered within and without with Weldon-stone dressings. Mr. Temple Moore is the architect for the extensions, which were illustrated in our issue of June 26, 1914.

The Carnegie Trustees have abandoned their scheme for the erection of experimental cottages in Damside-street, Dunfermline, as although the town council had sanctioned a schedule of the Burgh Police of Scotland Act in regard to the height of the rooms, which would be 8ft. 6in. instead of the stipulated 9ft. 6in., the Dean of Guild and the burgh engineer insisted upon doubling the sanitary accommodation to be provided, which would involve an outlay at which remunerative rentals could not be obtained. In pronouncing his decision, Dean of Guild Irvine said that the town council was aware that there were houses in Dunfermline in which there was not sufficient sanitary accommodation, but because matters had been bad in the past, that was no reason why they should be perpetuated.

Mr. W. O. E. Meade-King, M.Inst.C.E., has held an inquiry at Axbridge in respect of an application made to the Local Government Board by the Axbridge Rural District Council to borrow a further sum of £1,000 in connection with the almost completed scheme of improving the East Brent to Weston-super-Mare road. It was mentioned that of the originally estimated cost of £7,800 the Road Board had made a grant of £2,000 and the county council had granted £500, the arrangement being that the remainder of the expense should be borne by the Axbridge Rural and the Weston-super-Mare Urban District Councils. Evidence in support of the application was given by, amongst others, Mr. E. J. Stead (county surveyor of Somerset) and Mr. J. K. Dunster (surveyor, Axbridge Rural District Council).

PARLIAMENTARY NOTES.

ABERDEEN CORPORATION WATER.—By their Provisional Order, which came before the Commissioners for Private Legislation affecting Scotland, on Tuesday, the corporation of Aberdeen seek authority to construct new waterworks and to take an additional supply of water from the River Dee. It is set out that the existing waterworks have become inadequate to provide a water supply sufficient to meet the growing demands of the city. Power to borrow money for the purpose of the works proposed and for the general purposes of the water undertaking is sought. The purchase of lands and the execution of works and general purposes referred to are estimated to cost £450,000. The quantity of water proposed to be taken from the River Dee is not to exceed three million gallons in any one day, in addition to the eight million gallons authorised to be taken by previous Acts.

GLASGOW CORPORATION: ADDITIONAL POWERS.—Two Provisional Orders promoted by the corporation of Glasgow were considered by the Commissioners for Private Legislation Procedure (Scotland) at their sitting in Edinburgh on Tuesday. Mr. Ainsworth, M.P., presiding. One relates to the proposed purchase by the corporation from the Dennistoun Brown Trustees of an estate at Balloch, near Loch Lomond, to be used as a filter-bed, the agreed-on price being £30,000. The corporation also seek authority to erect a bridge over Adelphi-street to connect their Dalmarnock gasworks, which are situated on both sides of that street. The purposes of the other Order have reference to the supply of water. By the Glasgow Corporation Waterworks Act, 1855, the corporation were authorised to purchase and acquire the Glasgow waterworks and the Gorbals gravitation waterworks, and to introduce an additional supply of water from Loch Katrine. The corporation purchased the undertakings, and they are now vested in the corporation. Further powers were conferred upon the corporation by the Glasgow Water Acts, 1855 to 1912, including the right to take water from Loch Arklet. The corporation now ask to be empowered to obtain an additional supply of water from the River Turk, the Finglas Water and waters flowing into the same, in the county of Perth, and to construct and maintain the waterworks. Estimates have been prepared by the corporation, and amount to £327,000.

At the last meeting of the Worcester City Council it was stated that the corporation had spent £110,000 on sewerage, and yet the sewage was still going into the river.

The borough surveyor of Chesterfield, Mr. Vincent Smith, has received instructions from the corporation to prepare a housing scheme, the houses to be let at from 5s. to 5s. 6d. per week.

A Local Government Board inquiry was held at Bradford on Wednesday, before Mr. R. H. Bicknell, with reference to an application for sanction to borrow £900 for purposes of water supply.

At a general assembly of Academicians and Associates, Mr. Edgar Bundy (painter of costume subjects of the reign of Queen Anne), Mr. Charles L. Hartwell (sculptor), and Mr. Hyn W. Philpot (portrait painter) were elected Associates of the Royal Academy.

Mr. Thomas Howarth, the president of the Rochdale Master Builders' Association, has sent to the Rochdale Education Committee a cheque of £5 5s. to provide prizes for students attending building-trade courses in the technical school during the session 1914-15. We trust that, although the times are hard, the example will be widely followed.

The annual general meeting of the Auctioneers' and Estate Agents' Institute will be held at 34, Russell-square, London, W.C., on Thursday, the 13th inst., at 3 p.m. The council have decided to abandon the annual dinner this year on account of the war. The council are particularly desirous of obtaining a complete list of those members of the Institute who are now serving with his Majesty's Forces.

At a special meeting of the Weston-super-Mare Urban District Council held on Tuesday the clerk reported that the costs of, and incident to, the carrying through Parliament of the Weston-super-Mare Urban District Council Act, 1914, amounted to £5,870, increased by taxation charges in the House of Lords to £5,948. The Act provides for the acquisition of a new water supply, the provision of a new cemetery accommodation, the laying out of "Rogers Field," and confers many administrative facilities.

Our Office Table.

A course in architectural and landscape drawing will be provided at the Summer School in connection with the Campden School of Arts and Crafts, to be held from August 9 to September 3. The general director is Mr. C. R. Ashbee, F.R.I.B.A., and the instructor Mr. F. L. Griggs. The classes will be chiefly for the study of technique and composition. They will be held twice a week in August, and students will be at liberty to choose their own subjects, working either together or individually, and will have the opportunity of meeting the instructor one evening a week for his criticism of their work done apart from the classes. There is also a course in wood and stone carving, with modelling and figure structure. Particulars may be had from the secretary, Mr. W. T. Hart, Campden.

At a meeting of the Executive Council of the County Councils Association, held on Wednesday evening at Caxton House, Westminster, resolutions were passed protesting against the requirement of the Treasury that the Road Board should make it a condition of a grant towards the improvement of certain roads that they should be satisfied as to the adequate maintenance of other roads towards which they had made no grant, and expressing the opinion that the Road Board grant for 1915-16 towards the scheme previously sanctioned by the Road Board for the use of improved materials upon the more important main roads in the county of Gloucester ought not to be largely reduced in order to relieve the Parliamentary Votes for war purposes, at the cost of the Road Improvement Fund, from the charge of remaking roads destroyed by military traffic.

What should be insisted upon as the minimum number of bedrooms for cottages in rural districts? At the last meeting of the plans committee of Foleshill Rural District Council, the Rev. W. D. Rudgard referred to the practice of passing plans for houses which provided for only two bedrooms. He stated that the Stratford-on-Avon Town Council had much more power than the Foleshill committee in respect of by-laws and new buildings. At Stratford, when considering plans for houses, they insisted upon there being three bedrooms. They also had powers as to the rooms being a certain size. The surveyor said there was nothing in the Foleshill Rural Council's by-laws to prevent the erection of houses with only two bedrooms. The Rev. W. D. Rudgard thought it would be a good thing if the Foleshill Council could insist upon there being not less than three bedrooms in every new house. The Surveyor: We should never get any by-laws insisting upon three bedrooms, because in many instances two are sufficient. Hundreds of houses with only two bedrooms have been put up in Coventry.

Something unique among religious edifices is now—though not for long—to be witnessed in the rural district of Hassall, near Sandbach. This is a church, built by the owner of Hassall Hall three parts of a century ago, which has never been opened for worship. For nearly 80 years it has remained in an uncompleted state, and now, after that length of time has gone by without anyone coming forward to carry on the work which was commenced in earnest by the philanthropic squire, it is about to be demolished in order that the material may be used for a farm building. The church of recent years has become a well-known landmark, and many hundreds of people in the course of a year have visited the spot. It is of the type of Early English in vogue in William the Fourth's reign, of five bays under one roof, and having an octagonal tower and spire at the west end. The red bricks with which it is built are of excellent quality, all having been hand-made. The walls and roof are still intact, and are in excellent condition. No windows were ever put in. There is a belfry designed to hold about two or three bells, and there are also fifteen large vaults beneath the church.

A good deal of trouble to decorators, remarks *The Decorator*, would be avoided if they would take the precaution of testing the permanency of the colours of wallpapers before recommending them. Certain colours are very susceptible to the influence of light, and fade rapidly. When this is the case, the decorator naturally gets the blame, although, as a matter of fact, he has nothing whatever to do with the defect. The test is a very simple one. Cut off two pieces of the paper, pin one on a wall so that it reaches the strong sunlight, and place the other in a book or lock it up in a drawer. At the end of a couple of weeks, compare the two, and if there is any fading, the fact will at once become apparent. If the fading is considerable, the decorator would do well to exclude the particular pattern from his book, or, at least, mark it "not recommended for permanence."

Architects, engineers, quantity surveyors, and other computers will find an "Improved Four-figure Logarithm Table," by George C. McLaren, F.F.A.Scot. (Cambridge University Press, Fetter-lane, E.C. 1s. 6d.), very useful. Undoubtedly more people would use logarithms for multiplication or division if so much mystery was not made about them by some mathematicians. Anyone with an elementary knowledge of decimals can use them, and Mr. McLaren's table will assist such. But more advanced computers will also welcome it, and we think admit that it is more convenient than the four-figure logarithm card, for it is certainly easier, and more accurate, to refer to one out of nine thumb-indexed folios and find the complete logarithm, than, when using the card or single-folio arrangement, to make the necessary mental adjustment required for the fourth figure.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY (TO-MORROW).—St. Paul's Ecclesiological Society. Visit to Chelsea Old Church, Crosby Hall, and Chelsea Hospital, under guidance of W. G. Nightingale. 2.30 p.m.

MONDAY.—Royal Institute of British Architects. Thirty-first Annual Meeting. 8 p.m.

TUESDAY.—Royal Society of Arts. "The Empire's Resources in Paper-making Materials," by S. Charles Phillips. 4.30 p.m.

WEDNESDAY.—Royal Archaeological Society. "Some New Light on Roman Roads in Sussex," by A. Adrian Allcroft, M.A., Society of Antiquaries Rooms. 4 p.m.
Royal Society of Arts. "The Measurement of the Efficiency of Domestic Fires," by Dr. A. Vernon Harcourt, F.R.S. 8 p.m.

THURSDAY.—Royal Society of Arts. "Constantin Meunier et les Sculpteurs Belges de son Temps," by M. Paul Lambotte. 4.30 p.m.

SATURDAY (MAY 8).—Association of Managers of Sewage Disposal Works. Visit to the Southend-on-Sea Sewage Disposal Works and Refuse Destructor. 1.50 p.m.

The Norfolk County Council propose to carry out an extensive scheme of road development, provided a grant of £9,000 is obtained from the Road Board. It is proposed to spend £2,844 in converting to bituminous or similar surfaces certain existing granite roads, and £12,695 in converting gravel to granite surfaces, tar-painted.

An interesting archaeological discovery has been made in the course of excavations now proceeding near the Market-square, Devon. Remnants of an old wall were unearthed at a considerable depth below the present level, and a well-preserved carved head was found, which an expert engaged on restoration work at the Roman Pharos at Dover has pronounced to be undoubtedly Roman. Tiles of Roman make were also discovered near by.

Colonel A. J. Hepper, D.S.O., late of the Royal Engineers, has died in London, at the age of seventy-five. He was educated at King's College, London, and joined the Royal Engineers in December, 1859. In 1855-6 he was in command of the Royal Engineers with the Nile Frontier Field Force, and received the medal, the bronze star, the Third Class of the Medjidie, and the Distinguished Service Order. From 1890 till 1892 he was assistant commandant at the School of Military Engineering, Chatham. After his retirement from the Army, in 1896, Colonel Hepper was for ten years engineering inspector to the Local Government Board.

Bath Stone, delivered on road waggon, Paddington Depot	per foot cube	£ s. d.
Ditto, ditto, Nine Elms Depot	"	0 1 7½
Beer Stone, delivered on rail at Seaton Station	"	0 1 1
Ditto, delivered at Nine Elms Station	"	0 1 7½
Portland Stone, in random blocks of 20ft. average:—		
Delivered on road waggon	Brown	White
at Paddington Depot	White Bed. Base Bed.	
Nine Elms Depot, or	Per foot cube.	
Pimlico Wharf	£0 2 3 ... £0 2 4½	

TILES.

Plain red roofing tiles	s. d.	Divrd. at
Hip and Valley tiles	42 0	per 1000 ry. sn.
Broseley tiles	3 7	per doz.
Ornamental tiles	50 0	per 1000
Hip and Valley tiles	52 6	"
Naabon red, brown, or brindled ditto (Edwards)	4 0	per doz.
Ornamental ditto	57 6	per 1000
Hip tiles	60 0	"
Valley tiles	4 0	per doz.
Selected "Perfecta" roofing tiles: Plain tiles (Peake's)	3 0	"
Ornamental ditto	46 0	per 1000
Hip tiles	48 6	"
Valley tiles	3 10½	per doz.
"Rosemary" brand plain tiles	3 4½	"
Ornamental tiles	48 0	per 1000
Hip tiles	50 0	"
Valley tiles	4 0	per doz.
Staffordshire (Hanley) Reds or brindled tiles	3 8	"
Hand-made sand-faced	42 6	per 1000
Hip tiles	45 0	"
Valley tiles	4 0	per doz.
Hartshill "brand plain tiles, sand-faced	3 6	"
Pressed	45 0	per 1000
Ornamental ditto	42 6	"
Hip tiles	47 6	"
Valley tiles	4 0	per doz.

OILS.

Rapeseed, English pale, per tun	£28 15 0 to £29 5 0
Ditto, brown	26 15 0 .. 27 5 0
Cottonseed, refined	29 0 0 .. 30 0 0
Oliva, Spanish	29 10 0 .. 30 0 0
Seal, pale	21 0 0 .. 21 10 0
Cocount, Cochon	46 0 0 .. 46 10 0
Ditto, Cayenne	42 10 0 .. 43 0 0
Palm, Mauritius	42 10 0 .. 43 0 0
Ditto, Lagos	32 5 0 .. 33 5 0
Ditto, Nut Kernel	35 0 0 .. 35 10 0
Oliva	17 5 0 .. 18 5 0
Sperm	30 0 0 .. 31 0 0
Lubricating, U.S.	0 7 0 .. 0 8 0
Petroleum, refined	0 0 6½ .. 0 0 6
Tar, Stockholm	1 6 0 .. 1 10 0
Ditto, Archangel	0 19 6 .. 1 0 0
Linseed Oil	0 3 1 .. —
Baltic Oil	0 3 5 .. —
Turpentine	0 3 3 .. —
Putty (Genuine Linseed Oil)	0 10 0 .. —
Pure Linseed Oil	0 9 0 .. —
"Stority" Brand	0 9 0 .. —

GLASS (IN CRATES).

English Sheet Glass: 15oz.	21oz.	26oz.	32oz.
Fourths	4½d.	5½d.	6½d.
Thirds	5½d.	6½d.	7½d.
Fluted Sheet	5d.	6d.	—
Hartley's English Rolled Plate	3½d.	3½d.	4½d.
White.	—	—	—
Tinted.	—	—	—
Figured Rolled and Repousse	5d.	6½d.	—

VARNISHES, &c. Per gallon.

Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 6
Fine Elastic Carriage	0 12 9
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Fine French Oil	1 1 0
Eggshell Flaking Varnish	0 18 9
White Copal Enamel	1 4 9
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 6

Messrs. Baker and Lutyens, the Imperial Delhi architects, who have been in Delhi recently advancing drawing and designs of the various buildings, left for England by the last mail.

The partnership heretofore subsisting between E. H. Sedding and R. F. Wheatly, architects, at Queen Anne-terrace, Plymouth, and Wade-bridge, Devon, under the style of Sedding and Wheatly, has been dissolved.

Representing the Denver Sluice Commissioners, Mr. Crocker, engineer, opposed the Draft Ouse Provisional Order at a public inquiry at Ely last week, and he estimated the cost of the proposed work at £1,250,000. The order has been prepared by the Board of Agriculture and Fisheries.

TRADE NOTES.

Boyle's latest patent "Air-pump" ventilator has been applied to St. Barnabas' Church, Beckenham, Kent.

Messrs. Grover and Co., Ltd., have now completed the removal of their works to new and larger premises at Stratford, and all communications should be addressed to the Britannia Engineering Works, Carpenters-road, Stratford, E. The telegraphic address is "Adopted, Strat, London." Telephones, Stratford 984 (two lines) and Stratford 985.

CHIPS.

Mr. P. Darroch, surveyor and sanitary inspector to the urban district council of Newport, Salop, has been appointed district inspector for Kintyre.

Owing to the resignation of Mr. Arthur B. Hudson, F.S.I., who became a member of the City Corporation in 1885, a Common Council vacancy has arisen in Castle Baynard Ward.

The partnership between H. J. Woodward and J. Mills, builders and contractors, at Cox-street West, Balsall Heath, Birmingham, under the style of Woodward and Mills, has been dissolved.

An eight-storied hotel is about to be built at Saginaw, Michigan, at an estimated outlay of 700,000dol., from plans by Messrs. Graham, Burnham, and Co., architects, 80, Maiden-lane, New York.

Mr. Samuel Catley Parmenter, Braintree, formerly surveyor to the urban district council of that town, who died on February 3, aged eighty, left net personalty £21,486, and a gross amount of £33,319.

After a protracted discussion, the urban council of Enniskillen have adopted the report of the housing committee recommending the erection of thirty-two working-class houses at an estimated cost of £8,000.

The Local Government Board have given authority to the corporation of Colne to prepare a town-planning scheme under the Housing and Town-Planning Act, 1909, in respect of an area of about 876 acres in the borough.

OGILVIE & CO.

Telephone DALSTON 1388.

Many years connected with the late firm of W. H. LASCELLES & CO., of Bunhill Row.

Mildmay Avenue, ISLINGTON, N.

EXPERTS in HIGH-CLASS JOINERY.

ALTERATIONS & DECORATIONS.

ESTIMATES FREE.

FOR

Olivers'

Seasoned

Hardwoods,

APPLY TO—

WM. OLIVER & SONS, Ltd.,

120, Bunhill Row, London, E.C.

TENDERS.

* * * Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BARNSTAPLE.—For the erection of a union work-house and cottage homes, for the guardians. Mr. G. Mills, 23, Castle-street, Barnstaple, architect:—Dear, W., Gaydon-street, Barnstaple (accepted).

BOGNOR.—For building the "White Horse," for Messrs. Henty and Sons, Ltd., Chichester. Messrs. Whitehead, Bognor and Chichester, architects:—Booker, E., and Son ... £2,550 0 0 Seymour, H. W. ... 2,513 0 0 Briggs, H. W. (accepted) ... 2,170 0 0 Start, T. ... 1,955 9 0 (All of Bognor.)

CARDIFF.—For the supply of wood block flooring, for the education committee. Mr. J. J. Jackson, Director of Education, Town Hall, Cardiff, architect:—Ward, B., and Co., Kingsway, Cardiff 6s. 6d. (Accepted.)

CHIPPING CAMPDEN.—For enlarging churchyard, for the vicar and churchwardens. Mr. W. L. Lissaman, Islay House, Broadway, Worcester, architects:—Matthews and Mallis, Stratford-on-Avon ... £100 2 8 Emery and Co., Birmingham ... 153 19 0 Epsley and Co., Ltd., Evesham ... 109 17 0 Steward and Co., Broadway ... 104 10 0 Keitley and James, Campden ... 96 9 3

CENTRAL FINSBURY, N.—For rebuilding the boundary wall between No. 25, Penton-place and a new elementary school in Vernon-square, for the London County Council:—Patman and Fotheringham ... £130 0 0 (Accepted.)

CLAPHAM, S.W.—For the provision of additional lavatory accommodation for employees at Clapham carshed, for the London County Council:—

Wall, C., Ltd., Chelsea	£150 0 0
Bowyer, J. and Co., Ltd., Upper Norwood	120 0 0
Marsland, J., & Sons, Waltham	112 0 0
Roberts, A., and Co., Ltd., Kensington (accepted)	103 0 0
(Architect's estimate, £127.)	

CLERKENWELL, N.—For the reconstruction of portions of the electric goods lift at the Ray-street stores premises, for the London County Council:—

Waygood-Otis, Ltd., Southwark	£105 0 0
Eastern Lift Co., Ltd., Southwark, S.E.	188 0 0
Ditto, alternative tenders	£170 and 106 0 0
Penrose, A. W., and Co., Ltd., Farringdon-road, E.C.	172 0 0
Spagnoletti, Ltd., Goldhawk-road, W.	148 0 0
Ditto, alternative	140 0 0
* Accepted. (Chief engineer's estimate, £105.)	

HOLBORN.—For paving and other works in connection with the Southampton-row improvement between Bloomsbury-place and Vernon-place, for the London County Council:—

Bloomfield, E. T., Tottenham	£6,378 6 9
Mowlem, J., and Co., Ltd., Westminster	6,270 1 6
Anderson, G. J., Poplar	6,245 8 4
Ford, J., Willesden Junction	6,233 14 2
Farrow, H., Brixton (accepted)	5,983 9 1
(Architect's estimate, £6,164 3s.)	

ISLE OF DOGS.—For the enlargement of the Isle of Dogs pumping station, for the London County Council:—

Roberts, A., and Co., Ltd., Kensington	£20,699 14 2
Moss, S. E., Southend-on-Sea	19,232 5 5
(Execution of the works deferred; neither tender accepted.)	

LONDON.—For the supply of rolled steel bar for magnetic brake shoes, for the London County Council:—

	A.	B.
500 tons for 25A magnets.	120 tons for 25A magnets.	500 tons for 25A magnets.
Goodwin and Co., Sheffield—£14 10 0	£14 10 0	£14 10 0
Bessemer, H., and Ltd., Bolton—9 7 6	9 7 6	9 7 6
Earl of Dudley's Round Oaks Works, Ltd., Brierley Hill—8 17 6	9 10 0	8 17 6
Frodingham Iron and Steel Co., Ltd., Scunthorpe—8 16 3	8 16 3	8 11 3
Lilleshall Co., Ltd., Priors Lee Hall, Shifnal—8 10 0	8 10 0	8 10 0
(Accepted.)		

A.—Delivered at central car repair depot or any other store within 120 miles of Leicester. Price per ton. B.—Delivered in truck to siding at depot. Price per ton.

LONDON.—Accepted tenders for following works, for the Education Committee of the London County Council:—

Lewisham—Adamsrill-road, new school:—Smith, J., and Sons, Ltd. ... £17,979 0 0 Marylebone, W.—Barrett-street, adaptation as trade school:—Bowyer, J. C., Ltd. ... 815 0 0 Islington, S.—Sebbon-street, heating:—Yetton and Brockett, Ltd. ... 787 0 0 St. Pancras, S.—Exmouth-street, electric lighting:—Cash, H. J., and Co., Ltd. ... 349 0 0 Wandsworth—Wandsworth Technical Institute, painting new building:—Triggs and Co. ... 135 0 0 Wandsworth—Hitherfield-road, new school:—Lote and Co. ... 5,660 0 0 Hackney, S.—County secondary school, heating:—Pearson, R. H. and J., Ltd. ... 1,132 0 0 St. Pancras, W.—Haverstock Hill, heating:—Pearson, R. H. and J., Ltd. ... 889 0 0 Sussex—Portlaid industrial school, heating:—Smith, J., and Son ... 65 0 0 Laying wood block flooring at council schools:—Zeta Wood Flooring Co. ... per sq. yd. 0 6 2

Hampstead—Netherwood-street, heating:—Yetton and Brockett, Ltd. ... 335 0 0 Haggerston—Scawfell-street, electric lighting:—Johnson, O'Sullivan, and Co. ... 312 13 0 Whitechapel—Old Montague-street, ventilating fans:—Matthews and Yates, Ltd. ... 90 0 0 Marylebone, W.—Barrett-street trade school for girls, hot-water supply:—Yetton and Brockett, Ltd. ... 89 0 0 Hoxton—Shoreditch Technical Institute, equipment:—De Ritter, W. H., and Co., Ltd. ... 70 10 0 Hackney, S.—Homerton residential, extending lavatories:—Brand, Pettit and Co. ... 597 0 0 Hackney, S.—Homerton residential, iron staircase:—Hayward Bros. & Eckstein, Ltd. ... 65 10 0 St. Pancras, W.—Exmouth-street, painting new school:—McCormick and Sons, Ltd. ... 787 0 0 Deptford—Clyde-street, remodelling and painting:—Bowyer, J. and Co., Ltd. ... 1,000 0 0 St. Pancras, W.—Princess-road, remodelling and painting:—Roberts, C. P., and Co., Ltd. ... 834 0 0

LONDON.—For the supply of 20,245 yards of trolley wire, for the London County Council:—
 British Insulated and Helsby Cables, Ltd., Prescott ... Price a ton, £68 5 0
 Bolton, T., & Sons, Ltd., Bishopsgate, E.C. ... 68 5 0
 Watlington & Co., Ltd., Milton-street, E.C. ... 68 0 0
 Smith, F., and Co. (Incorporated in the London Electric Wire Co. and Smiths, Ltd., Salford) ... 65 19 6
 Fernand Esprit, East Indian-avenue, E.C. ... 66 10 0
 Edward Le Bas & Co., Billiter-st. ... 63 10 0
 * Accepted. The two lowest tenders were for goods manufactured abroad, and in view of transport difficulties, they were passed over.
 † Less 2½ per cent. discount.

LONDON.—For supplying 3,000 driving and 2,000 trailing wheel tires for the Council's tramcars, or, alternatively, 6,000 driving and 4,000 trailing wheel tires:—

	A.	B.	C.	D.
Patent Shaft and Axletree Co., Ltd., Birmingham—	£1 18 0	£1 15 0	£1 18 0	£1 15 0
Vickers, Ltd., Sheffield—	2 0 0	1 10 0	2 0 0	1 10 0
Steel, Peech, and Tozer, Ltd.—	1 18 7	1 11 11	—	—
Brown Bailey's Steel Works, Ltd.—	1 17 6	1 10 0	1 17 6	1 10 0
Cammell, Laird, and Co., Ltd.—	1 13 0	1 11 0	—	—
Bessemer, H., and Co., Ltd., Bolton—	1 10 6	1 5 0	1 10 6	1 5 0
Brown J., and Co., Ltd. (accepted)—	1 6 6	1 6 6	1 6 0	1 6 0

Baldwin Locomotive Works (Standard Steel Works Co.), Victoria-street, S.W.—

	A. and B.	C. and D.
£12,133 17 8	£24,267 15 4	
* Plus cost of freightage from New York.		
A.—3,000 driving wheel tires. B.—2,000 trailing wheel tires. C.—6,000 driving wheel tires. D.—4,000 trailing wheel tires.		

LONDON.—For the supply of rails for the construction, reconstruction, and maintenance of the Council's tramways:—

(i.) Track rails and fastenings.	
Bolckow, Vaughan, and Co., Ltd., Philpot-lane, E.C. ...	£29,375 10 0
Scott, W., Ltd., Leeds (accepted 28,340 0 0)	(Chief engineer's estimate, £26,590).
(ii.) Conductor rails.	
Frodingham Iron and Steel Co., Ltd., Scunthorpe (accepted) ...	17,150 0 0
	(Chief engineer's estimate, £15,650.)

LONDON.—For the supply of 100,000 creosoted deal paving blocks, 3in. by 9in. by 5in., for the London County Council:—

	Price a 1,000
Griffiths, W., and Co., Ltd. Bishopsgate, E.C. ...	£11 17 6
Howard, W. W., Bros., and Co., Trinity-square, E.C. ...	11 12 6
Miller's Timber & Trading Co., Ltd., E.C. ...	11 12 3
The Improved Wood Pavement Co., Ltd., Queen Victoria-st., E.C. ...	11 12 0
Burt, Boulton & Haywood, Ltd., Cannon-street, E.C. ...	11 10 0
Gabriel, T., & Sons, & Burtons, Lambeth ...	11 7 9
Lee, J. B., & Sons, Ltd., Gracechurch-street, E.C. ...	11 7 6
Acme Flooring and Paving Co. (1904), Ltd., Victoria Park ...	11 4 9

* Accepted.

PECKHAM, S.E.—For the provision of wrought-iron fencing in Peckham Rye-park, for the London County Council:—

Hill and Smith, Ltd. (accepted) ...	£81 18 6
RISHWORTH.—For the erection of eight artisan dwellings at Rishworth, for Messrs. J. W. Wheelwright and Son, Ltd. Messrs. Richard Horsfall and Son., 22a, Commercial-street, Halifax, architects. Quantities by the architects. Accepted tenders:—	
Excavators and masons:—	
Helliwell and Shaw ...	£1,060 0 0
Carpenter and joiner:—	
Whiteley, H., Richworth ...	410 0 0
Plumber and glazier:—	
Stafford, J. ...	178 15 0
Plasterers and slaters:—	
Whiteley and Berry ...	170 0 0
(Rest of Sowerby Bridge.)	

RUSKINGTON.—For the supply of granite during one year, for the urban district council:—
 Groby Granite Co. (accepted), X and XX qualities at 12s. 6d. per ton, and XXX at 9s. 6s. per ton.

SHEFFIELD.—For supply of electrical plant, for the corporation. Tenders recommended for acceptance:—
 One three-phase extra-high-tension oil switch, and four sets of metering gear:—
 Reyrolle, A., and Co., Ltd. ... £236 0 0

Spares required for the electric-light and power plant at the Ewden Valley waterworks, and for cables, lamps, and fittings:—
 General Electric Co. ... 84 0 0

SOUTHWARK.—For the erection of dwellings on the first section of the Tabard-street area, for the London County Council:—

Longley, J., and Co., Crawley, Sussex ...	£31,864 0 0
Holliday and Greenwood, Ltd., Battersea ...	31,253 0 0
Greenwood, J., Ltd., London Bridge ...	30,970 0 0
Brand, Pettit, & Co., Tottenham Holloway Brothers (London), Ltd., Lambeth ...	30,307 0 0
Holland, Hannen, and Cubitts, Ltd., Bloomsbury ...	29,695 0 0
Wall, C., Ltd., Chelsea ...	29,475 0 0
Ashby and Horner, Ltd., Aldgate ...	28,923 0 0
Garrett, J., and Son, Balham Hill ...	28,700 0 0
Thorne, F. and T., Isle of Dogs ...	28,645 0 0
Monk, A., Lower Edmonton ...	28,443 0 0
Lawrence, W., & Son, Finsbury-circus ...	27,465 0 0
Wallis, G. E., and Sons, Ltd., Haymarket ...	27,572 0 0
Fairhead, A., and Son, Enfield ...	27,334 0 0
Godson, G., & Sons, Kilburn-lane ...	26,835 0 0
Rowley Bros., Wood Green ...	26,796 0 0
	26,492 0 0
* Accepted. (Architect's estimate, £27,995.)	

SOUTHWARK, S.E.—For the erection of a temporary workshops building at the chief station of the fire brigade, for the London County Council:—

Monk, A., Lower Edmonton, N. ...	£1,325 0 0
Godson, G., and Son, Kilburn-lane, W. ...	1,285 0 0
Wall, C. Ltd., Upcombe-rd., S.W. ...	1,200 0 0
McManus, J., Hammersmith-road, W. ...	1,190 0 0
Mather, J. C., Northampton-street, W. (accepted) ...	1,100 0 0
	(Architect's estimate, £1,450.)

SOUTHWARK, S.E.—For supplying a motor instructional tender, for the Fire Brigade Committee of the London County Council:—

Dennis Bros., 1913, Ltd. ...	£486 0 0
	(Accepted.)

SOUTHWARK.—For the supply of a motor lorry for use by the fire brigade, for the London County Council:—

The McCurd Lorry Manufacturing Co., Ltd., Store-st., W.C. ...	£900 0 0
The Daimler Company, Ltd., Pall Mall, S.W. ...	791 15 0
Albion Motor Car Co., Ltd., Upper Rathbone-place, W. ...	770 0 0
Leyland Motors (1914), Ltd., New Kent-road, S.E. ...	765 0 0
Clayton & Co. (Huddersfield), Ltd. ...	765 0 0
Stevens, W. A., Ltd., Victoria-street, S.W. (accepted) ...	764 0 0
London Motor Exchange, Baker-street, W. ...	675 0 0
Belsize Motors, Ltd., Manchester ...	675 0 0
Dennis Bros. (1913), Ltd., Guildford ...	650 0 0

Owing to the demands being made upon them by the military authorities, the two lowest tenders were unable to specify the dates by which they would be in a position to effect delivery, and the fire brigade committee were advised that the lorry offered by the third lowest tenderers would not be suitable for the purposes of the brigade.

WANDSWORTH, S.E.—For the execution of road-work in connection with the construction of the London Council's tramways in East Hill, Wandsworth, from the present terminus to Fairfield-st.:—

Stark, A., & Sons, Ltd., Glasgow ...	£6,700 0 0
Manders, W., and Co., Leyton ...	5,903 0 0
Dick, Kerr, & Co., Ltd., Cannon-street, E.C. ...	5,867 0 0
Griffiths, W., and Co., Ltd. ...	5,867 0 0
Bishopsgate, E.C. ...	5,692 0 0
Coles, A. N., Plymouth ...	5,591 0 0
Mowlem, J., and Co., Ltd. ...	5,415 0 0
Westminster (accepted) ...	5,415 0 0
Wimpey, G., and Co., Hammer-smith ...	5,198 0 0
Chief engineer's estimate, £5,400.	

WEM.—For alterations and additions to National schools, for the managers. Mr. R. Matthews, Parr's Bank Chambers, Nantwich, architect. Quantities by Mr. R. Matthews:—

Manley, S., Aston, Nantwich ...	£1,899 0 0
Powell, R., Prees, Whitechurch, Salop ...	1,842 0 0
Jervis T., Wem, Salop ...	1,820 0 0
Dorse, H., Cradley Heath, Staffs ...	1,499 0 0
Tommy, F. and E., Station-road, Wem, Salop (accepted) ...	1,386 10 0

NOTICE.

Bound copies of Vol. CVIII. are now ready, and should be ordered early (price 12s. each, by post 12s. 9d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XL., XLVI., XLIX., LIII., LXL., LXII., LXIV., LXV., LXVI., LXVII., LXVIII., LXIX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., LXXVII., LXXVIII., LXXIX., LXXX., LXXXI., LXXXII., LXXXIII., LXXXIV., LXXXV., LXXXVI., LXXXVII., LXXXVIII., LXXXIX., XC., XCI., XCII., XCIII., XCIV., XCV., XCVI., XCVII., XCVIII., XCIX., C., CII., CIII., CIV., CV., CVI., and CVII. may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

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LIST OF COMPETITIONS OPEN.

May 29—County Offices, Dundalk (Prof. William A. Scott, A.R.I.B.A., Assessor. Irish Architects only) ...	C. McAlester, County Sec., Court House, Dundalk.
June 7—Municipal Buildings, Stepney (Mr. Henry T. Hare, F.R.I.B.A., Assessor) ...	G. W. Clare, Town Clerk, 15, Great Alie-st. Whitechapel, E.
Nov. 1—Port Extension, Christiania ...	The Harbour Board, Akersgaten 55, Christiania.
No date—Designs for Cottages, Bromborough Estate. Architects in Practice only. Cost not more than £1,000 per group of Five, and £1,400 per group of seven. (Mr. Geoffrey Lucas, F.R.I.B.A., Assessor) ...	Nine premiums of 2½ p.c. per group Lever Brothers, Ltd., Port Sunlight, Cheshire.

LIST OF TENDERS OPEN.

BUILDINGS.

April 30—Houses (24), Cowlesley, Milnsbridge ...	Linthwaite U.D.C. ...	J. Ainley, Archt., Chapel-street, Slaithwaite.
30—Two Shops and Eight Cottages, Trawden ...	Co-operative Society, Ltd. ...	The Manager, Co-operative Soc., Ltd., Trawden, Lancs.
May 1—Engineer's Workshop at Pumping Station, Pontefract ...		J. E. Pickard, Boro' Sur., Municipal Offices, Pontefract.
3—Residence, Kellham, Newark ...		Sheppard and Lockton, Archts., Bargate, Newark.
3—Police Station and Constables' Houses, Earby, Skipton ...	West Riding Standing Joint Com. ...	P. O. Platts, West Riding Archt., County Hall, Wakefield.
3—Labourer's Cottage, Gordon House Farm, Cockfield ...		W. H. Ralston, Sreatlam Castle, Darlington.
3—Residence, Bradford & Wakefield-road, Tingley ...	A. Cowling ...	T. A. Buttery, L.R.I.B.A., Queen-street, Morley.
3—Children's Hospital, Sunderland ...		T. Robinson, Sec., Sunderland.
3—Central Library & Three Branch Libraries, Sunderland ...	Corporation ...	The Borough Engineer, Town Hall, Sunderland.
4—Clearing Site Twentyman's-court, Carlisle ...	Corporation ...	H. C. Marks, M.I.C.E., City Eng., 36, Fisher-street, Carlisle.
5—Office Premises, Alterations to, Bell-street, Dundee ...	Combination Parish Council ...	T. M. Caddon, F.R.I.B.A., 32, Bank-street, Dundee.
6—Offices, Wheel Shop, and Sheds, Dairycoates, Hull ...	North-Eastern Railway ...	A. Pollard, Company's Architect, York.
6—Constitutional Club, Twyn-y-fald, Penam ...	Constitutional Club Co., Ltd. ...	D. J. Thomas, M.S.A. Archt., Blackwood, Mon.
6—Post Office, Brook-street, Sutton-in-Ashfield ...	Urban District Council ...	Walter Burn, A.M.I.C.E., Sur., Forest-st., Sutton-in-Ashfield.
6—Primitive Methodist Chapel, Malkin's Bank, Sandbach ...		Alfred Price and Sons, Archts., Sandbach.
7—Filter House, Extension of, Huddersfield ...	Corporation ...	The Waterworks Engineer, Town Hall, Huddersfield.
8—Reslating Roof of Workshop at Carsheds, Kirkcaldy ...		W. L. Macindoe, Town Clerk, Kirkcaldy.
8—House, Pilton-street, Pilton ...	Pilton United Charities Trustees ...	J. C. Southcombe, Archt., Bridge Bldgs., Barnstable.
10—Professionals' House & Club Conveniences, Normanton ...	Golf Club ...	A. Hartley, Archt., County Chambers, Castleford.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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The Lord Wandsworth Institution, Long Sutton, Hampshire. View and plan. Mr. E. Guy Dawber, F.R.I.B.A., Architect.
The Lifford Memorial Hall, Broadway, Worcestershire. Mr. Andrew N. Prentice, F.R.I.B.A., Architect.
New Higher Elementary or Special Students' Schools, Hyde, Lancs. Selected Design: Plans, elevations, section, and detail. Mr. H. Quentery Farmer, Architect.

THE ROYAL ACADEMY.

THE PICTURES AND SCULPTURE.

Generally, the Royal Academy is by no means a bad show this year. The total number of works hung is 1,926, as against 2,245 in 1914—a decrease of 319. Of the total 765 are paintings in oils, which is about 100 fewer than last year; 614 water-colours and miniatures, 147 etchings, drawings, and engravings; 190 architectural drawings, and 210 pieces of sculpture. The general arrangement of the rooms is much the same as usual. In the first two galleries the line has been kept low; but in the others that seems to have been found impracticable. Portraiture and landscape predominate, and certainly hard times do not seem to have hurt the portrait-painters much, for these seem more than ever, not a few, naturally, being of men in naval and military uniform.

In a way, the War-pictures are, of course, the feature of this year's exhibition; but, with a few exceptions, they are disappointing. Not more so, perhaps, than most pictures of modern war, which is comparatively barren as regards the great dramatic moments which thrill the painter and enthral the beholder. Those familiar with the German galleries during the years following the struggle of 1870 must have noticed the same absence of effective appeal to the emotions. Nor as historical records are the majority of war-pictures of much value. The artist has seldom had the opportunity as eye-witness of realising the scenes he depicts, and the horrors of wholesale slaughter are, fortunately, impossible of effective reproduction. They are best emphasised by the great allegorical painter, and he is scarce in these days.

Of his art, Mr. George Clausen is certainly the best present-day exponent in his "Renaissance" (143), in many respects the most striking work in this year's exhibition. He has seized the idea which we are all alive to, and that is the rebirth of France. It will be said by some, doubtless, that the old man in black clothes, who mourns between the two half-nude figures amid the ruins, is too suggestive of a model, and that the contrast between the group of which he forms the centre, and the nude figure of Hope rising from the yellow and mauve crocuses, is too crude; but the main purpose of the picture cannot be missed, and none who know and love France will fail to realise that Frenchmen to-day have shed the last shreds of the sloughing of the Third Empire, and the earlier days of the Republic, and are united in their patriotic aspirations for true progress.

Probably the next picture which will

attract the notice of the mass of visitors is Mr. H. A. Olivier's "Where Belgium greeted Britain" (360), depicting the meeting of King George with King Albert on December 4, 1914. It is more authentic than interesting, perhaps, but hardly of sufficient importance, or so rendered as to be of much value to those to come as a souvenir of the great struggle.

Mr. John Lavery's "Wounded—London Hospital, 1915" (181) appeals more to the feelings—not, perhaps, altogether successfully. The nurse and the young Gordon Highlander, in the foreground, are out of scale with the rest, and rather suggest that they are there to show how it is done. Otherwise, the picture is well-composed, and infinitely better done than might be supposed possible.

Of the other War-pictures, one of the best is Mr. W. L. Wyllie's pilot's-eye view, "The Fighting-Line to the Sea" (352). If the aeroplane is more visible than the fighting-line, that, doubtless, was no fault of the artist; but the demands of modern war on the painter will more and more make such direct appeals to the imagination of the ordinary beholder common, we expect. Mr. T. Mostyn's "Flight" (435) is effective, but hardly impressive as a record of the miseries of which it is typical. He is much more at home in such really beautiful scenes as his "The Garden of Peace" (670). Mr. Richard Jack's "Homeless" (462) is, perhaps, truer to its subject, but a little stagy. Mr. John Charlton's "Retreat from the Marne" (593) has more of the real thing in it for those fond of "combat," but seems rather a record of what ought to have happened, but did not. His "French Artillery Crossing the Flooded Aisne" (556) is better. Mr. W. B. Wollen's "Landreies, August 25" (664) is good street-fighting, but somewhat strained in its violence. "Comrades" (369), by Mr. James P. Beadle, is very theatrical. The British soldier who is keeping the bullets off his dead French comrade may pardonably be anxious to save the spick-and-span new uniform of the latter, which rather suggests the property-room than the battlefield. More to the life, perhaps, is his "Charge of the 2nd Batt. Rifle Brigade at Bergendal, South Africa" (639). Mr. W. P. Adam's interior, "War" (480) is one of the best-rendered bits of real war. The room wrecked by a shell is vividly indicative of actual havoc. "The Strongest" (973), by Mr. Fortunio Matania, may please the vulgar; but, to our thinking, the stolid German soldier at whom the Belgian or French boy is putting out his tongue scores by his indifference to the youngster's insult. Commonplace, perhaps, but appealing to

more of us who have watched the men drilling, is "War-Time: The Courtyard of Burlington House in 1914" (448). Well-arranged, anyhow, is Jan V. Chelminski's "Russian Cavalry Reconnoitring in the Carpathians, 1914" (645). The snow scene is natural, and horses and men are well-drawn. "Tipperary" (552), by Mr. J. C. Dollman, is in lighter vein, but hardly so successful a reminiscence as some might have thought easy.

Memories of past struggles are recalled by Mr. Frank O. Salisbury's large decorative panel, showing "Queen Philippa Pleading for the Lives of the Burghers of Calais" (706), who, possibly, were in bad condition enough after the siege, but hardly so manifestly, we fancy, as represented. Mr. A. D. McCormick's "Nelson at the Battle of Copenhagen Sealing his Letter to the Crown Prince of Denmark" (95) ably depicts an "indiscretion" the repetition of which most of us would welcome if events should render it necessary. Mr. E. Matthew Hale has a good picture of "The Duke of Wellington Reviewing some Riflemen" (191). Miss Marjory Watherston gives a spirited representation of "The Defence of the Barrier at Inkerman by the Royal Scots Fusiliers" (544); and Mr. Briton Riviere takes us back to classic times with his "Night Outpost of Xenophon's Greeks on the March of the Ten Thousand" (428), a skilful retreat, as all have agreed, but possibly easier of arrangement than in these days of long-range guns and poisonous gases.

The naval pictures will attract many. Mr. W. L. Wyllie's "Bringing in the Wounded Lion" (469) is good. Was it passed by the Censor, we wonder, or his "Portsmouth in War-time: Mine-Sweepers Putting out to Sea" (746)? Still more effective is his "Masters of the Seas" (533). Mr. Norman Wilkinson shows "Battle-Cruisers, Invincible and Inflexible, Engaging the Enemy: Falkland Islands Action" (551), and "The Sinking of the Blucher, January 24, 1915." Mr. Percy F. Spence's "H.M. Australian Fleet Arriving at Sydney Roads" (599) was presented to the King, and is lent by His Majesty. Mr. Charles Dixon is represented by "Spit-head: July 25, 1914" (1183), in which the great review just before war broke out is shown, as well as by "On Tilbury" (1242) and "In Line Ahead" (1265). Mr. Bernard Gribble has two good things, "The Loyal Men of the Bounty" (606) and "Tug Sending Shipwrecked Sailors Ashore" (732).

Portraits, as we have said, abound. The President, Sir E. J. Poynter, has three, "Miss Doris and Miss Brenda Peterson" (98), "The late Bruce Harvey Stephens,

Esq." (189), "Miss Doris Petersen" (421). Sir Edward also shows "Orpheus with his Lute" (386), "The Walls of Old England" (937), and "A Boathouse on Como Lake" (912). Mr. John H. Sargent has two, "F. H. Jenkinson, Esq., M.A., the Librarian to the University of Cambridge" (56), and a characteristically self-assertive portrait of "Earl Curzon" (391). Of his three small Tyrolean landscapes, we like "Master and Pupils" (28) best, though the "Mountain Graveyard" (61) is the more sensational. Mr. William Orpen is fortunate in his subjects in the "Marchioness of Headfort" (167), who so lately left the musical comedy stage, especially. Mr. Lavery's "Queen Mary" (385) loyally does the fullest justice to the charm of the First Lady in the Land. Mr. Walter W. Oulless has three, "The Rt. Rev. the Lord Bishop of Worcester" (3), "Colonel H. B. Hamilton" (162), and "The Hon. C. N. Lawrence" (374). Mr. H. H. La Thangue sends two, "John Maddocks, Esq., J.P." (41), and "Mrs. Marion L. Illingworth" (365). Mr. George Clausen, one, "Mrs. John Heaton" (575). Mr. A. S. Cope, four; "Donald MacLennan, Esq." (97), "Colonel Blyth" (163), "The Rt. Rev. G. F. Browne, D.D." (397), and "The Earl of Ancaster" (548). Mr. F. C. Cooper, three, "Lieut. Dion C. Calthrop" (357), "Alderman W. H. Churton" (587), and "Mrs. Noel Buxton" (840). Mr. Frank Dicksee, three, "Mrs. Prettyman Newman" (32), "Ethel, Daughter of Sidney Dicksee, Esq." (447), and "Mrs. James Simpson" (502). Sir Luke Fildes, three, "Winifred Ellerman" (27), "James Anderson, Esq." (439), "Francis R. Gregson, the King's Body-guard for Scotland, Royal Scottish Archers" (491). Mr. Arthur Hacker, five, "Miss Elaine Barran" (40), "Lady Benn" (158), "Cynthia De La Motte" (377), "Mrs. Butt" (513), and "Wenda, Daughter of Harry Whitworth, Esq." (630). Of the three shown by Mr. Reginald Eves, the best is "Sir Archibald Geikie" (66). There is a good one of "Mr. Reginald Blomfield," by his brother R.A., Mr. J. S. Shannon, who sends three more, "Mrs. Usher" (48), "Mrs. Phipps" (85), and "Mrs. Knott" (402). The Hon. John Collier has two, "C. V. Boys, Esq., F.R.S." (160), and "Miss Gladys Cooper, in 'My Lady's Dress'" (627). Mr. John S. Heller Lander sends one of "Field-Marshal Sir John French" (487).

One wonders sometimes how some of the large groups of portraits find a place, considering the huge space they occupy. "A Discussion on the Piltown Skull" (693), by Mr. Bertram Priestman, is interesting, with its group of portraits, including Sir E. Ray Lankester, and seven other distinguished scientists; but the substantial-looking Scotsmen of the "Arbroath Whist Club" (588), by Mr. George Harcourt, hardly so much so. More will probably take care not to miss his portrait of "The late Sir Hubert von Herkomer" (481).

The subject-pictures of any interest are few this year. Mr. Seymour Lucas's "Flight of the Five Members" (583) is as good as most of its class; but Strode, the principal figure, monopolises the "business" as obtrusively as a third-rate "star" on tour. "Faust first sees Marguerite" (15), by Mr. F. Cadogan Cooper, possibly as he conceives the incident, but there is little about her, to our thinking, to have attracted her lover.

Among the best of the rest are: Mr. David Murray's "Shadow and Shower" (14), his "Graves of the Clansmen" (65), "London Bridge" (381), a delightfully-glorified rendering; "A Day in October, Venice" (500), and "The Old Trossachs Road, Aberfoyle" (783). "The Church" (6), by the new R.A., Mr. Arneson Brown,

is good, and so are his "Wide Marshes" (88) and "The Rain-cloud" (182). Others that will find favour are: Sir E. A. Waterlow's "On the Wengener Alps" (44); "A Gleamy Day in Ross-shire" (353), by the late H. W. B. Davis; "The Ochils" (356), by Mr. D. Y. Cameron; "Noonday, Equihen" (376), by Mr. H. Hughes-Stanton; "Ought I to Go?" (417), by Mr. Stanhope A. Forbes; "The School and Church of St. Rocco, Venice" (446), by Mr. Henry Woods; "A Memory" (440), by Mr. James Sant; "Memories" (453), by Mr. Horace Taylor; "Spring Morning" (455), by Mr. George Henry; "Danaë" (485), by Mr. W. Strang; "The Beach" (621), by Miss Emily Court; "In the Luxembourg Gardens" (674), by Mr. Will Ashton; "A Corner of My Garden" (675), by Mr. B. Eastlake Leader; and "A July Day" (723), by Mr. Gerald Moira. Of Sir W. B. Richmond's six subjects, "The Tree of Knowledge" will attract many; but we prefer "Euphrosyne" (128).

There are not a few good etchings. Among the best are, "The Belfry of Bruges" (234), by Mr. Axel Haig; "St. Wulfram, Abbeville" (237), by Mr. Percy J. Westwood; and "The Town-Hall, Louvain" (272), by Mr. William Monk.

THE SCULPTURE.

The average of the sculpture is not high this year. There is, indeed, only one work that grips one, and that is "Premier Matin" (1906), by the Belgian sculptor, M. Egide Rombeaux. The wholly-nude figure of Eve, in marble, is splendidly conceived and vigorously executed. Its equal has been rare at any exhibition these many years, and we trust it will not leave England.

Among works of contemporary public interest, the principal is the model of the gilt-bronze medallion lately erected on the Thames Embankment to "Richard Norman Shaw, R.A." (1793), by Mr. Hamo Thornycroft. Others are the "Model of Memorial to Capt. Scott" (1809), to be placed in St. Paul's Cathedral, by Mr. S. Nicholson Babb; Mr. John Tweed's sketch for the portrait-statue to be erected in Whitehall of "The late F. M. Sir George White, V.C." (1812); Sir W. Goscombe John's "Model of a Memorial to the late Rt. Hon. Alfred Lyttelton" (1847), which is to be placed in St. Margaret's Church, Westminster; Sir George Frampton's memorial bronze of "Sir W. S. Gilbert" (1863), destined for the Embankment; and the original model for the figure of "Enterpe" (1879), by Mr. Charles Pibworth, carved in Portland stone on the exterior of the Orchestral Association in Archer-street, W.

The busts, as usual, are numerous. Among the few of any general interest are those of "A. H. Gilkes, Esq." (1758), late Master of Dulwich College, in bronze, by Mr. Frederick J. Wilcoxon; "H. S. Murray, Esq." (1772), in marble, by Mr. F. W. Doyle Jones; "Maj.-Gen. Sir Coleridge Grove" (1785), by Mr. F. W. Pomeroy; "The late Rt. Hon. Joseph Chamberlain" (1788), to be placed in the Guildhall, in marble, by Mr. F. Derwent Wood; "F.M. Earl Roberts" (1791), in bronze, by Mr. W. Robert Colton; "Sir E. Ray Lankester" (1822), by Mr. James A. Stevenson; "Sir Hercules Read" (1845), by Mr. Henry Pegram; "His Eminence Cardinal Newman" (1848), by Mr. A. Broadbent; a bronze head of "F.M. Earl Roberts" (1853), by Mr. Hamo Thornycroft; "F. D. Bowles, Esq." (1859), one of the firmest pillars of the Pearl Insurance Company, and his colleague, "George Shrubbsall, Esq." (1868), both in marble, and by Sir George Frampton; and one of "Sir Cowasjee Jehangir, Bt." (1861), in marble, by Sir Thomas Brock.

Among miscellaneous exhibits of more or less merit may be mentioned "Happy Reflections" (1761), a bronze statuette, by Mr. Percy G. Benthall; "A Captive" (1771), a statuette, by Mr. F. W. Pomeroy; "The Whisper of Love" (1789), a group, by Mr. Vernon Toft; "Elizabeth" (1830), a portrait statuette in silver, by Mr. Alfred Turner; a bronze group of "Mermaids" (1884), by Mr. Henry Poole; and a group of "Faun and Panthers" (1920), a bronze group, by Mr. Creswell H. Desmond.

ARCHITECTURE AT THE ROYAL ACADEMY.—II.

We have already illustrated in our issue of Jan. 15 last, the drawing of the Royal Exchange, Manchester, which the architects, Messrs. Bradshaw, Gass, and Hope are showing at the Royal Academy this year (1527). We commented then on the excellence of their plan, for which Mr. J. S. Gibson, as assessor, awarded them the first place in the competition held some little time ago. The portions of the original Exchange necessarily incorporated in the new work obviously hampered the architectural design of the premises considerably. The drawing next to this (1528) shows another building already published in our pages—viz., the Hospital for Skin Diseases, Blackfriars, by Mr. Wm. A. Pite, and we remember remarking upon the adroitness of its plan, set as it is on a small, awkward, corner site. The exterior is unpretentious, as it should be, and the same may be said of No. 10, Salisbury-square, E.C. (1531), by Messrs. Castle and Warren, also in red brick. Mr. W. Warman knows the North of France very well, and the ambitious "Memorial to a Great War," for which he has made a grandiose design, impresses one with the idea of size. The building (1533) is neither stern nor severe, but is redundant in the treatment modelled after the French fancy for finish and detail. Close by this big drawing are two or three smaller ones, likewise in colour, such as Mr. Paul Waterhouse's Prudential Offices, Leicester; Christ Hospital Offices, by Mr. Arthur Blomfield, and a Branch Library, erected by the Borough of Woolwich, Mr. Maurice B. Adams being the architect (1536). Grace and taste invariably distinguish work by Mr. Walter H. Brierley, F.S.A., and so we expect to find a pleasant reserve about the S.W. front of the Hall at Sledmere, Yorks (1541), as rebuilt after the fire. We shall reproduce this water-colour view shortly, and intend to give an illustration also of the Country House (1549) which Messrs. Ambrose Poynter and Geo. H. Wenyon are about to erect in America with garden-terraces. It is marked by some consequence of style in brick and stone. The house which Messrs. Tubbs, Messer, and Poulter are carrying out at Weybridge, "Crow Clump" (1561), we shall also reproduce, as well as (1563) the Dalziel High School, Motherwell, N.B., here shown by a pencil perspective bearing the name of the architect, Mr. Samuel B. Russell. Mr. Muirhead Bone's perspective (1568), marked by all his special mannerisms, is hung too low for close inspection; but it sympathetically depicts the Bristol Royal Infirmary, designed by Messrs. H. Percy Adams and Charles Holden, a work of some magnitude, and of no small importance, very boldly and simply treated in an original way. The East Sussex Hospital, by Messrs. J. Saxon Snell and Stanley M. Spoor, is seen in a good birdseye, which we shall give close by is a view of the Municipal Offices and Town Hall, Middleton (1573), also won in competition, by Mr. Alick G. Horsnell, whose

drawing we have already illustrated, the design displaying a well balanced façade, nicely detailed in a moderate manner, without pretension. Mr. M. Adams-Auton is an adept in pure water-colour brilliancy aided by dexterity. His "Restoration of a Tudor Hall" (1576) is hung too high for intimate examination; but No. 1616, "A Modern Interior Executed in Old Material," hung on the line, illustrates this artist's facility of expression in clear, pure tints, even if an air of unreality pervades this interior, with its merging reflections in what presumably must be a highly-polished floor. The inglenook below a big timber beam and the dog-grate recess intimate some risks as to the chance of smoke lacking control. The ceiling girders tend to ignore the limitations of lineal perspective. The joy of transparency in a colour scheme such as this overcomes carping criticism of conventionality, so easy to phrase in regard to the domain of the concrete or commonplace. Another very dexterous piece of draughtsmanship on the same wall, carried forward in pastel or crayon, may be mentioned in this connection, though quite different to the brush study just referred to. The subject is a competitive design for St. Paul's Bridge, by Mr. W. S. George (1620) mainly interesting on account of this drawing, which, for artistic feeling, is first rate, and in that way the exhibit ranks among the best in the gallery, though the design itself is indifferently conceived.

The new farmstead and cottage, Ewell Manor, Kent, by Messrs. Geoffry Lucas and Arthur Lodge (1578), stand on a triangular site seemingly, and adapt themselves to a picturesque contrivance pleasingly worked out. The next exhibit bears the title, "The General Post Office, St. Martin's-le-Grand," by Mr. Henry T. Rees; but it is simply, we believe, a speculative design, and therefore the title is misleading, so perhaps we may rightly presume that this drawing (1579) must rather be reckoned as an outsider's alternative proposal. Cheshunt College, Cambridge, by Mr. Morley Horder, we have already illustrated from this same little bird's-eye (1580), which does not quite do the quaint buildings justice. The Band Pavilion, Folkestone, likewise the result of a competition, is by Messrs. Palmer-Jones and T. F. W. Grant, the architects, who send a nocturne showing the building from the Lees, with the Casino set off by lights "before the moon is up." The building seems well adapted to its purpose, without the usual trimmings peculiar to kiosks, so cheap-looking and common. The "Daily Chronicle" Editor's Room, Salisbury-square, is interesting as the sanctum of the well-known chief of one of the most up-to-date dailies in London. The façade of the new building to be erected for this paper in Fleet-street is not yet settled. Messrs. G. Reginald Farrow and S. R. Turner are the exhibitors of this interior (1582). "The Millhouse," Fittleworth, Sussex, shows what can be done with knowledge in connection with one of these jolly old wind landmarks, and Mr. L. Rome Guthrie is well aware of the possibilities in this direction (1584). Following the catalogue, we note five houses of moderate size in Greenaway-gardens, Hampstead, modestly exhibited in one frame by Mr. Cyril A. Farey, being black-and-white prints which we intend to publish in our Academy series during the season. The Workshops for the Blind at Bolton we have already illustrated, by the courtesy of the architects, Messrs. Bradshaw, Gass, and Hope (1590), whose water-colour hangs hard by an excellently free pen-and-ink perspective of a big

country house in Yorkshire, called "Whinburn," now building under the direction of Messrs. John W. Simpson and Maxwell Ayrton, near Keighley, in a sturdy and thoroughly English style, reminding us in a minor way of Haddon, owing perhaps mainly to the big squarish tower and pretty gables interspersed with parapets. "The De'il's Neuk," in Scotland, standing on a rocky eminence (1609), is in keeping with its weather-exposed situation, and is intended to be seen from below, so towers up with a picturesque diversity which in no way interferes with its unity of conception, for which Mr. Andrew Prentice, who, by the way, makes his own drawings, is responsible. His other two buildings in the gallery are of a different type, one being a big brick mansion designed for a well-wooded park-like property in Sussex, and the third drawing represents the Lifford Memorial Hall at Broadway, Worcester, where the old style of good domestic architecture remains in vogue, almost indigenous round about the Cotswolds. "Rochampton Court" is a capital and capable house, by Mr. F. S. Chesteron, nicely drawn in pencil (1593), and we note with pleasure the new Library and Schools at Shrewsbury, by Messrs. Forsyth and Maule (1622), which we shall illustrate later.

The Metropolitan Water Board Offices in Finsbury are represented by a coloured model in this exhibition and a perspective of the same façade overlooking the main road towards the centre of London. Both illustrate the frontispiece of the premises now being erected by the architect, Mr. H. Austen Hall, whose design we published with the other competition schemes last year, when he was appointed for this important work (1610), which will add much to the architectural interest of the district. "The Hall and Corridors," of "Tirley Garth," Cheshire (1613) are typical of Mr. C. E. Mallow's good taste and sincere draughtsmanship. A stone-faced house in Queen Anne-street, Cavendish-square, by Mr. W. Henry White (1621), is shown by a well-drawn washed elevation, which we propose to illustrate in the near future. Mr. Alan Brace indicates the buttercups 'midst the grass of the field in front of his homely house at Hammer in Hampshire, built in an old-English red-brick style, which looks comfortable enough (1637) in this unassuming water-colour sketch, wherein the item mentioned induced a further inspection of the subject itself. The Pusey House, Oxford, is scarcely a domestic undertaking, belonging as it properly does to the University; but we may mention it here before proceeding to note the Ecclesiastical exhibits which, as we already remarked, form so important a feature of the Architectural Gallery this year at Burlington House. Mr. Temple Moore, in the front of Pusey House, has recognised the most befitting and entirely English style which, while faithful to the spirit of the past, expresses the needs of the present in a centre of historic culture and contemporary learning, and is carried forward on University traditions. Quiet and unassuming, this street elevation looks at home, and will wear well in spite of changing fashions and restless desire for novelties, which soon tire and then look so trumpery. Not so the solid sturdiness and good proportions displayed by Mr. Richard J. Allison in the Classic detail of his portals of the New Government buildings at Cardiff, here so well shown (1596).

The large interior perspective drawn by Professor Adshead (1643), of St. Anselm's Church, Kennington, calls for some comment, for the view certainly furnishes an exalted notion of the scale of this up-to-date building, uncompromisingly exotic in

treatment, though doubtless well adapted in plan for public worship and "advanced" ritual. The baldachin over the altar and tester above the pulpit serve to increase the sense of size below the blue haziness of the vaulted roof left thus intentionally undefined with that end. We can scarcely admire the voluted caps, which seem decidedly out of perspective, though precedents doubtless could be looked up to warrant the curiously uncommon detail adopted. Mr. Schultz Weir's chapel for Lord Bute, in the R. C. Cathedral at Westminster (1644), is certainly a remarkable and very costly piece of marble decoration, worked out with knowledge and scrupulous care, and taking a very long time to execute and complete, depending more on continued supervision than elaboration of architectural detail drawings. These two sectional drafts of St. Andrew's Chapel here exhibited are, therefore, rather to that extent ineffective and disappointing. The new church which Mr. Temple Moore is erecting at Gillingham, Kent (1648), the proposed church of St. Michael and St. George, Heswall, by Mr. R. T. Beckett, of Chester, and St. Gabriel's Church, Plymouth, by Mr. William D. Caröe are all workmanlike and well shown, being suitable, though so very different, in their individual belongings. Few ecclesiastical exhibits are better in their proportions than the handsome private chapel which Mr. Cecil G. Hare built in the park at Elm-hurst, near Lichfield (1697). We illustrated this exterior drawing last year. The same scholarly architect is well represented by two effective water-colours of the new cathedral at San Francisco, U.S.A. (1657 and 1664). The building was originally designed in conjunction with his partner, the late George F. Bodley, R.A. Subsequently the scheme, however, was modified considerably as now shown, and although we fully illustrated Mr. Hare's geometrical drawings at the time, no views have hitherto been exhibited. We hope to publish these later on. The interior is spacious and consistently worked out with dignity and grace, thoroughly distinguished by the balance of mass. Modern and finely proportioned, the church is without a clerestory, but has a richly-traceried triforium, a great feature being made of the vast central octagon. The lighting is managed entirely by big windows in the aisles, and from the tall, crowning feature over the crossing. The western towers, so sturdy and plain, are made intentionally subsidiary to this dominating octagon. The view from the west exhibits the success of the composition, which claims distinction, and obtains a central position on the line in this gallery. Set between these two pictures is another, also by Mr. Gascoyne, of an exceptionally attractive, though much less important, building—viz., a Roman Catholic church, by Mr. G. Gilbert Scott (1660), at Northfleet, Kent, standing on an eminence overlooking the Thames. The architect, in no sense an imitator of traditional-Medievalism, has frankly used reinforced concrete, introducing lintels to some of the side windows in the aisles and in the clerestory; but the distinguishing character of the scheme is due to the boldly-conceived "western" tower, with its tall belfry window, and the gathering in on the summit of the composition from the square outline on plan to an octagon, by way of a parapet kept in scale with the rest. No plan is shown, but we know an organ gallery occurs in the tower, and that vestries are placed at the "eastern" extremity of the sanctuary with chapels, on what one usually speaks of as the "N. and S." As a matter of fact, the building does not orientate, the entrance

end facing nearly true north. This perhaps was not realised by the artist when the shadow casting of the perspective was done. We shall reproduce it in an early issue. Khartoum Cathedral, with the tower added, is contributed by Mr. Robert Schultz Weir, the architect (1661).

Mr. G. H. Fellowes Pryne shows his Ceylon cathedral at Colombo (1699 and 1703) by two rich water-colours, giving an excellent idea of its importance and elaboration, which, in a clear atmosphere, will be very telling, graced as it is with almost Oriental suitability in big proportions. The exterior, Flamboyant in many bands of repeating stone and red brick, is thereby increased in sense of scale, with towers emphasising the mother church of this far-reaching diocese. Inside Romanesque vaultings cover the nave with blue groinings, relieved by stars in gold, and there is a red hanging rood at the entrance to the choir. The plan of this church is evidently very complete; but the drawing of it is hung at too high an altitude to be properly seen. The blue of the sky in the exterior view is much too intense, and illustrates some remarks on this subject given in our first review of the exhibition printed last week. Mr. Leonard Stokes is represented by two views of the Roman Catholic Cathedral at Georgetown, Demerara (1700 and 1709), built or intended to be built, we believe, in concrete, and, in a way, it is handled with that idea, a fine tower and spire being used to impart becoming dignity to its spacious and well-designed shapeliness. The absence of masonry jointings, so essential to Mediæval vitality of the poise and balance of live construction, so characteristic of genuine old work in vault and buttress, must detract from the essentials or naturalness of true Gothic lines, while the quality of texture can never belong to a cement-rendered concrete erection, which in this way imposes limitations seriously hostile to the poetry of ecclesiastical conceptions aiming heavenward as an ideal. Mr. W. A. Pite sends a drawing (1695) of the Church of the Good Shepherd, Ealing, and we are much interested in the not very attractive view of the design for alterations to the interior of Holy Trinity Church, Lambeth (1701), by Sir Charles Nicholson, Bart., who proposes to introduce timber framings to cut up the ungainly body of this building. The effect is incongruous enough; but something seemingly had to be done, and so an open-shaped screen, with wood and iron uprights, like bars, are seen with a rood over it, and big, coloured statues are set against some of the main posts, which have nothing in common with a class of building never fit for a place of worship, and poor at best as an auditorium. The little Roman Catholic church and cottage-like presbytery at Southwold, by Messrs. Benedict, C.S.S.S., and Beart Foss (1705), is unpretentious, without attempting to compete with the fine parish church of that town. Mr. Charles Spooner is represented by a tame interior of St. Gabriel's Church, Aldersbrook, Manor Park, E. (1673), and we noted a nice treatment, not strongly-drawn, however, in the pencil view by Mr. Gerald Horsley, of All Saints Church, Hanley (1690), with its outdoor pulpit at the West end. The tower, having a timber lantern at top, is not yet built. Messrs. Everard, Son, and Pick are proposing to erect a curious but seemingly capable church at Leicester (1666), with curved lines to rooflines and domes, and interesting detail. Nearby is Mr. Temple Moore's Cathedral at Nairobi (1674), which we shall illustrate a little later on, and we may refer to a drawing, too high up to study, of the English Church, Cap d'Antibes, by Mr. Frank L. Pearson

(1657). It is square in form, and after the character of an early foreign chapel, no doubt well adapted to its purpose.

In conclusion, we have yet to mention two railway-stations on the Chuli and Bolivia Railway (1542), by Mr. Arnold Mitchell, in refined Classic, here shown by elevations without any plans. Another station is that now being erected on the Thames Embankment at the Temple for the Underground District Railway Company, by Mr. H. W. Ford (1599). The excellent water-colour alluded to is well hung, and we shall publish it with plans and sections at an early date. The selected design for Denbigh Town Hall and Markets (1617) is a clever example of its kind, nicely-drawn and picturesquely-handled. We have arranged to issue a reproduction of this work in our Academy Series during the season. Messrs. John Brooke and Elcock are the architects. Mr. Wontner Smith occupies the centre of the gallery with a large model of his design for the St. Paul's Bridge done to quarter-inch scale; but we do not admire it.

THE R.I.B.A. ANNUAL REPORT.

The eighty-first annual report of the Council of the Royal Institute of British Architects, presented at the meeting of members held on Monday evening, stated that during the past twelve months the losses by death have been 11 Fellows, 3 retired Fellows, 15 Associates, 13 Licentiates, 4 Hon. Associates, and 1 Hon. Corresponding Member. The following statement shows the present subscribing membership of the Royal Institute, compared with corresponding periods of 1911, 1912, 1913, and 1914:—

Year.	Fellows.	Associates.	Hon. Associates.	Total.
1911	862	1,509	55	2,426
1912	859	1,581	56	2,496
1913	847	1,630	54	2,531
1914	852	1,695	56	2,603
1915	857	1,713	54	2,624

During the official year since the last annual meeting 29 Fellows have been elected, 57 Associates, and 3 Hon. Associates. There are 2,017 Licentiates on the roll. Since the publication of the last annual report 15 Licentiates have passed the examination qualifying for election to the Fellowship, and 12 of these have been duly elected as Fellows.

The Progressive Examinations were held in June and November-December, 1914, with the subjoined results:—

	Admitted.	Exempted.	Examined.	Passed.	Relegated.
Preliminary examinations	227	73	154	111	43
Intermediate examinations	163	48	115	66	49
Final and special examinations	133	—	133	62	71

The Ashpitel prize was awarded to Mr. George Eric Francis. The statutory examination qualifying for candidature as district surveyor in London, and for candidature as building surveyor under local authorities, was held in October, 1914. There were five candidates, of whom two passed. The second studentship at the British School at Rome awarded under the Henry Jarvis Bequest was awarded to Mr. Ernest Cormier, who is now in residence at Rome, and the Henry Jarvis Scholarship at the Architectural Association was awarded to Mr. A. B. Hamilton. The competition for the scholarships and studentships at the British School at Rome will not be held this year, on account of the war. During the course of the year the President has appointed the following architects to act as arbitrators in connection with building disputes: W. H. Atkin-Berry, G. C. Awdry, W. H. Bidlake, Max. Clarke, H. O. Cresswell, A. W. S. Cross, H. W. Garbutt, F. B. Dunkerley, Matt.

Garbutt, J. Alfred Gotch, Edward Greenop, George Hubbard, J. W. Little, J. Douglass Mathews, Alan E. Munby, D. Barclay Niven, C. Stanley Peach, H. A. Satchell, A. Saxon Snell, Herbert Shepherd, John Slater, Alfred Stoner, W. Henry White, and Wm. Woodward. The following have been the President's appointments to assessorships during the year:—T. Edwin Cooper, Paul Waterhouse (twice), Wm. Milburn, G. Hastwell Grayson, Edwin T. Hall, E. Vincent Harris, P. Morley Horder, S. Perkins Pick, H. V. Lanchester, Glendinning Moxham, Prof. S. D. Adshead (twice), Leonard Stokes, J. Alfred Gotch, John W. Simpson, A. N. Paterson, T. Geoffrey Lucas, and Reginald Blomfield, R.A.

Since the issue of the last annual report the Council have made the following grants:—Architectural Association, £350; Architectural Association (from the Anderson-Webb Fund), £250; Architects' War Committee Special Relief Fund, £250; Exhibition of Architecture, Paris, 1914, £281; Library Fund, £200; Prince of Wales's Fund, £105; Architects' Volunteer Training Corps, £50; Architectural Association Sketch Book, £25; Royal Architectural Museum, £21; and British School at Rome, £21.

In consequence of the outbreak of the war, it was decided that the consideration of all matters of policy of a controversial nature should be deferred. The question of a new Charter and of the formation of a Register of Architects has therefore remained in abeyance. More than 1,200 members of the architectural profession are now embodied in various branches of the forces, and it has been decided to remit the subscriptions of all Members and Licentiates of the Institute who are serving their country in this way. The prize competitions for the year have been postponed for twelve months, and arrangements have been made to avoid the penalising of candidates for the examinations who have joined the Colours. A grant of 100 guineas has been made to the National Relief Fund, and the Architects' Volunteer Training Corps, which was formed by the Architectural Association, has received financial and other assistance. A register of Belgian architects who have come to England as war refugees has been compiled, and some of the privileges of Institute membership have been granted to them during the period of the war. In conjunction with other artistic and learned societies, the Royal Institute submitted a protest to the American Government against the destruction of buildings and monuments by the Germans in Belgium and France. The financial difficulties of the Architectural Association, arising from the patriotic action of so many of its members and students, have been sympathetically considered by the Council, who have shown their appreciation of the value of the educational work of the Association by making a special grant of £250, in addition to the usual annual grant of £100, and by making a further grant of £250 from the balance of the Anderson-Webb Fund. The question of the desirability of drawing up special "war clauses" for use in connection with the R.I.B.A. form of contract was very carefully considered by the Council, who had the benefit of the advice of the practice committee, and it was finally decided that no official action in this direction was advisable. The course of events in the building trade since the early weeks of the war appears to indicate that this decision was a wise one. A few days after the beginning of the war the President summoned a meeting to consider what action should be taken in view of the crisis, and as a result of this meeting a committee, known as the architects' war committee, was formed, which had the advantage of the services of members of the Architects' Benevolent Society, the Architectural Association, and the Society of Architects, and of architects not connected with any of the architectural societies. With the aid of two subordinate committees, known as the selection committee and the professional employment committee, a great deal of valuable work has been done. Assistance has been offered and given to the War Office and other Government Departments, a substantial contribution to the

National Relief Fund has been raised by subscriptions from members of the profession, and a war relief fund for architects has been instituted, which has already been instrumental in relieving distress arising from unemployment in the profession. The interests of the profession have been safeguarded by the assiduous personal efforts of the President, who has been in constant communication with various departments of the Government since the outbreak of the war.

The scheme for the establishment of a Legal Defence Union for Architects, which was referred to in the last annual report, was submitted to the members at a special general meeting; but in the absence of a quorum no progress could be made with the consideration of the scheme drafted by the Board of Professional Defence.

The Council have taken action in connection with all the complaints as to the professional conduct of members that have been laid before them. Several members have been dealt with under the provisions of by-laws 24 and 25 for taking part in competitions which had been vetoed by the Council. It has been decided to publish an advertisement in selected newspapers from time to time warning the public against professional advertising by architects.

The discussion of the revised schedule of charges has been completed, and the new scale will be brought into operation by the Council in due course.

The committee on official architecture has completed its consideration of the matters referred to it, and has presented its final report to the Council. This report is of such a controversial nature that the present is not a suitable time for its discussion, and the Council have accordingly decided to defer its consideration for six months.

On the recommendation of a committee mentioned in the last annual report a number of changes have been made in the organisation and the boundaries of several of the societies.

The usual financial statement appended to the report indicates that, in spite of the adverse effects of the war, the finances of the Royal Institute are in a satisfactory state. The remission of the subscriptions of those members who are serving with the Forces and the reduction in the examination fees paid by students are the principal causes which have led the Finance and House Committee to anticipate a small deficit on the year 1915. When normal conditions again exist, it is to be expected that there will be a substantial surplus of income over expenditure. The liquidation of the Architectural Union Company has now been completed, and the company's lease has been transferred to the Royal Institute.

THE BOARD OF ARCHITECTURAL EDUCATION.

The following committees have met and reported from time to time to this Board on the matters referred to them—viz., testimonies of study, examinations, exemptions, preliminary examination, joint committee of Board and examiners. During the year 469 designs have been received and adjudicated on, and of these 329 have been approved, being a decrease of 55 and 44 respectively on the previous year, this result being doubtless due to the war. These designs have been publicly exhibited in the galleries of the Royal Institute for three days after each adjudication, and a large number of visitors have availed themselves of the opportunity of viewing them. The Council, on the recommendation of the Board, have reserved the galleries for the future for the bi-monthly examination and exhibition of these designs. The Board have conducted the Royal Institute Examinations, and the results as reported to the Council have been published. Each candidate for the final examination is now required to deposit with the moderator at the end of the first day of the examination in design a tracing showing the general lines of his design. An additional three hours on the third day of the examination have been allotted to this subject. With the approval of the Council, the preliminary examination will be discontinued after June, with the exception of the

subjects of freehand drawing and geometrical drawing or perspective; but every candidate for registration as probationer must satisfy the Board that he has attained a sufficient standard of general education. In connection therewith the Board have had under consideration a proposal from H.M. Board of Education with reference to a scheme for improving the existing arrangements for the examinations in secondary schools in England. After consideration of the scheme, the Board have recommended the Council to accept a pass in the first examination which the Board of Education propose to institute as satisfactory evidence of the candidates having attained a sufficient standard of general education. With reference to the intermediate and final examinations, the Board acknowledge the ungrudging labour which for many years past has been given by the honorary examiners to these examinations; but it was felt that with the large number of different examiners for the same subjects it was difficult to maintain a uniform standard for all the candidates, and, after lengthy and careful consideration, the Board prepared a scheme for modifying the examinations, reducing the number of examiners, and recognising their work by payment from the Institute funds. It was found that in all the kindred professional societies which hold examinations the fees paid by the candidates were considerably higher than those in operation at the Institute, and the Board believe that by raising these fees a fund would be formed from which adequate remuneration could be paid to the examiners without trenching largely on the general funds of the Institute. The alterations recommended are that: as to the preliminary examination the fee should remain as at present; for the intermediate the fee should be £6 6s., instead of £3 3s. as at present; the final fee £6 6s., instead of £4 4s.; and the special £10 10s., instead of £6 6s. In the two latter cases the examination fees are to cover the entrance fee paid by Associates. The modifications suggested in the examinations are as follow:

INTERMEDIATE EXAMINATION.

Subject A.—Two papers on the Principal Styles and General History of Architecture, and the purpose of Architectural Features in relation to the Buildings in which they occur.

Subject B.—Two papers on: 1. Simple Applied Construction in Elementary Design and the Properties and Uses of Ordinary Building Materials. 2. Theoretical, including Stresses and Strains.

Subject C.—A paper dealing with one of the following subjects:—

1. Historical Architecture showing knowledge of one of the following periods, to be selected by the candidate: (a) Greek and Roman; (b) Byzantine and Romanesque; (c) French and English Gothic; (d) Italian, French, and English Renaissance.

2. Mathematics and Mechanics. Algebra, up to and including the binomial theorem. The use of the slide-rule. Plane trigonometry, including the solution of triangles. Descriptive geometry, including the mensuration of simple plane and solid figures. Simple conic sections treated geometrically. General statics and dynamics, including graphic statics.

3. Design.—Dealing with simple subjects.

Subject A to be divided between two examiners, who shall also take the papers in Subject C1.

Subject B to be divided between two examiners, who shall also take Subject C2.

FINAL EXAMINATION.

Subject A.—Design for a Building of moderate dimensions, or a portion of a more important edifice, to be made from particulars given. The drawings to comprise plans, elevation, and section, to a scale of $\frac{1}{16}$ in to the foot, some details to a large scale, with a sketch perspective. The subject will be communicated in general terms to the student some days before the examination.

Subject B.—Two papers on Construction, including Iron and Steel Construction, Ferro-Concrete Sloring and Underpinning.

Subject C.—Hygiene, including Drainage, Ventilation, Heating, Lighting, and Water Supply.

Subject D.—The Properties and Uses of Building Materials.

Subject E.—The Ordinary Practice of Architecture including Specifications and the Law of Contracts.

Subject B and Subject D to be divided between the two examiners who set the papers in Subjects B1, B2, and C2 of the Intermediate Examination.

Subject C and Subject E to be divided between two examiners. All the foregoing examiners to be paid.

With reference to the design (intermediate and final) and thesis, it was suggested that at present these examiners should remain unpaid. The whole of these modifications, which were subsequently approved by the Council, would have come into operation this year had it not been for the outbreak of

the war, and it is hoped that the new scheme will be in full working order next year. The Board have granted certain specific privileges to candidates who have joined the Colours. On the recommendation of the examiners, the time for the written and graphic portions of the statutory examination has been extended from one to two days.

The Ulster Society of Architects have asked the Board to inspect the School of Architecture at the Municipal Technical Institute, Belfast, with a view to its being placed on the list of recognised schools. Mr. Paul Waterhouse, as the representative of the Board, visited the school. After consideration of Mr. Waterhouse's report, the Board—while not at present placing the school on the list of those whose course is recognised as exempting from the intermediate examination—have recommended the Council to insert particulars of the school amongst the educational facilities in Ireland mentioned in the Kalendar. The certificate of the two full years' course at the Robert Gordon Technical College, Aberdeen, supplemented by three years' work in the evening classes, is now accepted by the Board as exempting from the intermediate examination. Mr. H. V. Lanchester, who visited this school at the request of the Board, and reported favourably on the course of study there, has been appointed the external examiner to the school. Candidates other than British subjects who are desirous of possessing evidence of their having obtained the status, though not the rank, of an Associate of the Royal Institute will for the future be admitted to the final examination, and in the event of their passing will be furnished with a certificate to that effect. The Board, at the request of H.M. Board of Education, have conducted the examination of candidates for the National Scholarships in Architecture. These candidates are required to pass the intermediate examination, but are exempt from submitting the testimonies of study required from Institute candidates. H.M. Board of Education have consulted the Board with reference to the awarding of National Art Scholarships, and have been informed that if the scholarships are to be held at a final school they should be awarded before candidates have passed the final examination; but that if such scholarships are in the nature of travelling studentships they should be awarded after the candidates have passed the final examination.

THE ART STANDING COMMITTEE.

Many matters have engaged the attention of this committee during the session. A proposal to convert the old Grammar School of Edward the Sixth at Shrewsbury (now a library) into municipal offices was dealt with at some length. Happily the scheme has now been abandoned. The proposal to demolish the interesting building in Great Queen-street, W.C., known as "Boswell's House," has been the subject of great concern to the committee, who have very carefully considered the matter. Various ways of presenting the case against demolition to the freeholder—both alone and in conjunction with other societies—have been fully discussed. It was found impossible, however, to save the building, which has now been pulled down, but it is hoped that arrangements may be made by which some portion of the façade may be re-erected in one of the galleries of the Victoria and Albert Museum. This museum, desiring to add to its collection of measured drawings of old work (especially French, German, Spanish, and Scandinavian), invoked the assistance of the Institute with this end in view. The scheme now on foot to do away with the present picturesque wooden bridge spanning the Thames at Goring, and to replace it by one of ferro-concrete, has evoked no little dismay. Steps are being taken to influence opinion against the change, or at least to insure that if possible the design of the new bridge shall be in harmony with its surroundings. The question of holding exhibitions in the Institute galleries is one which has received attention at the hands of this committee, who drew up and

presented a report to the Council thereon, in view of arranging for an exhibition of rare prints and drawings in the near future. It was felt, however, that the present time is not entirely opportune, and the scheme is therefore set aside for the moment; but it is hoped to bring it forward again when circumstances permit. A sub-committee has been appointed to consider the incidence of certain sections of the London Building Act upon design. Several meetings have been held by this sub-committee, but the result of its deliberations is not yet available. The question, though difficult and intricate, is one which is felt to be important and worthy of consideration.

THE LITERATURE STANDING COMMITTEE.

The schemes which this committee has had under consideration for some time, with regard to providing furniture for the better preservation of the Institute's collection of drawings, have been again considered by the committee, and further reports with estimates of cost having been submitted to the Council were approved. The work is now in hand and the new fittings will shortly be placed in the library. A further addition to the library furniture will be a more convenient and larger type of table for the use of readers. The committee have been in communication with the science committee, in order that the collection of scientific books in the reference and loan libraries may be extended and kept up to date. The librarian has been allowed to make a further choice of books from the library of the late Mrs. Arthur Cates, through the courtesy of Miss M. Rose (her niece), who has also presented a collection of casts of intaglios. Through the kind offices of Mr. Arthur Keen, a collection of original drawings by A. W. Pugin was presented by Mr. J. Williams. The question of the continuance of the subscriptions for German periodicals having been considered, the committee decided that the subscriptions should be discontinued during the period of the war. Many valuable books have been purchased during the year. The committee have under consideration the advisability of compiling an index of Belgian and French architectural works which have been destroyed during the war in France and Belgium. It is proposed to confine the index to works which already form part, or may be added to, the Institute collection. The librarian reports to the committee that during the year 200 volumes have been added to the library of the Royal Institute, exclusive of periodicals, reports, and transactions of societies, and parts of works issued in serial form. Seventy-nine volumes and 15 pamphlets were presented, and 121 volumes were purchased, of which 42 were added to the loan library. The attendance of readers in the reference library numbered 4,632, and the number of books issued on loan was 2,372.

THE PRACTICE STANDING COMMITTEE.

The sub-committee dealing with the revision of conditions of contract were by their own desire relieved of their task, and on the suggestion of the committee, the Council, towards the end of last session, appointed a special committee to deal with the subject and to sit continuously until their labours are completed. This committee are still at work. The question of a form of sub-contract, and the position of the sub-contractor generally, have been referred to the special committee, and it is understood that a report on these matters has been made to the Council. The suggested revision of the Institute "Handbook on Dilapidations," originally published under the ægis of the committee in 1903, and now out of print, has been submitted in draft by Messrs. Sydney Perks and Edward Greenop, and is being considered by the committee. The practice committee appointed the professional conduct sub-committee, to which all questions relating to professional conduct have been referred. By this sub-committee a large amount of useful work has been done under the chairmanship of Mr. George Hubbard, with Mr. Edwin Gunn as hon. secretary. At the invitation of the Council, the committee made suggestions which have

been adopted for bringing more prominently before the Members and Licentiatees of the Institute the various rules laid down by the Institute on the subject of professional conduct, to which a note as to auctioneering and estate agency has been added. The committee are now considering, at the request of the Council, the compilation of a more explicit and amplified code of rules on the whole subject. The frequency with which the President is appealed to for the appointment of arbitrators under the R.I.B.A. contract appeared to render it desirable that stereotyped forms of application and appointment should be employed. The committee has prepared such forms, and they have been adopted for the use of the President. In view of the increasing number of cases in which arbitration proceedings prove abortive after the appointment of an arbitrator by the President, and of the consequent loss occasioned to arbitrators, it has been found advisable to prepare some suggestions for their use. These suggestions, approved by the Institute's solicitors, are being issued as an Institute paper. The committee, at the request of the Council, considered the best means of dealing with the difficulties in building operations arising out of the war crisis. They appointed a sub-committee, which interviewed representatives of the builders and obtained their views, and devoted a considerable amount of time and trouble to the drafting of special clauses for insertion in the conditions of contract, and to the preparation of a very careful report on the subject. The committee's recommendations, however, were not adopted by the Council. The question of the desirability of charging by percentage for additional copies of plans, etc., supplied to builders was referred by the South Australian Institute of Architects to the Council for its opinion, and by the Council to the committee, who reported that they did not consider such a basis of charging could be recommended. The Concrete Institute having submitted to the Council a draft form for the standardisation of the measurement of reinforced concrete, this was referred to the committee, and after careful consideration by a sub-committee, was approved, with the rider that reinforced concrete should be shown on the architect's drawings, and the quantities for it taken off in the usual way. A suggestion that the Institute should take part in a conference on the subject with the Concrete Institute was also approved. A large number of inquiries from members bearing upon points of professional practice and kindred matters have been received and dealt with. Of these, nearly one-half were concerned with difficulties arising out of the existing conditions of contract and the schedule of charges, and it may fairly be anticipated that a large number of the difficulties which arise in the use of both these documents will be removed when their respective revisions have been adopted. In regard to questions as to professional charges, the growing number of cases which have been submitted to the committee from all parts of the country asking for advice as to the reasonableness of professional charges, and often accompanied by a considerable mass of documents and drawings, involving the expenditure of a large amount of time and labour for even their cursory perusal and examination, has compelled the committee to decline in future to give opinions on such matters, especially when submitted *ex parte*, and likely to lead to legal proceedings, unless some matter of principle is involved.

THE SCIENCE STANDING COMMITTEE.

The committee have appointed a small sub-committee to make a further inspection and report on the present condition of the samples of stone undergoing the weathering test at the Geological Museum, London. The committee regret that till the London County Council decide that revision of their existent drainage by-laws be undertaken, no opportunity will arise to make use of the suggestions for essential amendment and simplification therein which were the outcome of the labours of the sub-committee, who gave much time and careful consideration to this subject.

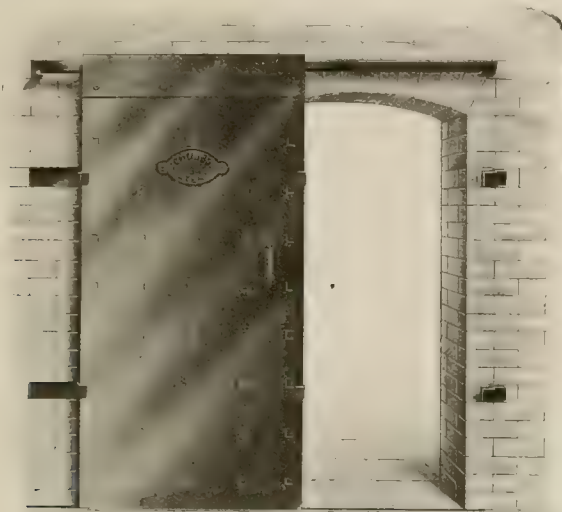
On the recommendation of the committee, the Institute Council wrote to the Metropolitan Water Board on the subject of a new requirement which the Board were seeking to enforce in regard to the arrangement of lavatory basin overflows. In the opinion of the committee this requirement, and the permissive alternatives, were open to grave objection on more grounds than one, and hope was expressed that, for the reasons stated in the Council's letter, the requirement would be withdrawn. No reply beyond a formal acknowledgment having come to hand, the committee requested the Council to press for a reply. The Council have at length approved the report and draft timber specification submitted by the committee last session, and have requested the committee to take steps for the further necessary discussion of the subject with representatives of the Institute of Builders and the Timber Trades' Federation. The committee have appointed a sub-committee for this purpose. No information has reached the committee as to the result of the Council's memorial to His Majesty's Treasury in regard to a grant for the investigation of problems connected with timber. At the present time it is, of course, hopeless to expect any favourable reply from the Treasury. The committee considered the draft of the L.C.C. (General Powers) Bill, 1915, of which Part III. (Drainage of Premises) and Part IV. (Buildings on Low-Lying Land) were concerned with building. With the assistance of a sub-committee, a report on these parts of the Bill was drawn up and submitted to the Council, with a recommendation that the Institute should petition Parliament against the Bill. This recommendation was accepted, and, at the request of the Council, the committee instructed the Institute solicitors and approved the petition, which was duly lodged. The committee are glad to learn that, as a result of strong opposition, Parts III. and IV. of the Bill have been withdrawn. The committee have decided to collect data as to cases of underground water met with during excavations and building operations in and near London. Information from architects has been invited, and the committee hope to be able to record such information in a manner intended to be of future service to architects for proposed building operations in the area. The Council have accepted a recommendation from the committee that the Institute leaflets on dry-rot in timber should be supplemented. The committee have been, and still are, engaged in collecting information and preparing a report as to the additional matter to be included in the leaflets. The important work of the sub-committee considering the construction of belfries and effect of vibration on buildings has continued; but it has been found necessary to confine the sub-committee's attention for the present to the construction of belfries. During the year the sub-committee have met on eleven occasions and have examined several belfries during actual bell-ringing; bell-foundries have also been visited, and the observations of founders obtained. The sub-committee dealing with defective roofing-tiles are arranging for two whole-day visits to representative tile-making districts to be made by themselves and the committee during the month of May, and are preparing two or three short papers on roofing-tiles and their defects to be read next session. Amongst other matters which have come within the scope of the committee's work are jointless flooring, manufacture of chloride of magnesium; wall finishings in hospitals; fire prevention; air pollution, and construction for localities subject to earthquakes.

REPORT OF THE AUDITORS FOR 1914.

In regard to the income and expenditure account, it is satisfactory to note that, although during 1914 large and unexpected calls have been made upon the funds, the surplus amounts to £2,722 9s. 5d., in comparison with £1,302 1s. 3d. in 1913. The total expenditure for 1913 was £11,567 13s. 3d., whilst that for the year 1914 has been £11,391 12s. 4d., a reduction of about £176. In 1914 savings have been effected on fuel,

salaries; general printing, stationery, stamps, and petty expenses; general meetings, medals, and prizes, and the cost of producing and issuing the Journal and Kalendar. A very satisfactory reduction of the bank overdraft has been effected. In 1913 the amount was £4,846 7s. 1d., and in 1914 £2,707 1s. 10d., a diminution of about £2,139. The various grants made by the R.I.B.A. in the year 1913 amounted to £534, whilst those in 1914 were more than doubled—viz., £1,148. This great increase is principally due to the special grants made to the War Committee Fund and the Prince of Wales's Fund.

severest fire test and certified that the door affords "full protection (Class B)," which is the highest classification. The test was a four-hours' firing in a brick furnace, in one wall of which the door was fixed. The temperature aimed at was 2,000deg. F.; actually it reached 2,040deg. F., and the face of the door against the fire became white hot. Yet the outside temperature, 14in. away, never exceeded 125deg. F., and a piece of newspaper only 12in. from the door was not scorched. It will be remembered that aluminium, brass, copper, and silver melt below 2,000deg. F., and cast-iron melts at



CHUBB'S STELOCRETE SLIDING DOOR.

Doubtless owing to the war, the receipts for examination fees have greatly decreased—viz., from £1,633 16s. in 1913, to £1,169 14s. in 1914. This decrease is largely due to the fact that many men who under normal conditions would have entered for the examinations are now either at the front or in training.

2,200deg. F. At the end of the four-hours' firing a stream of water, at a pressure of 90lb. per square inch, was directed for five minutes point blank against the face of the door which had been in the fire. Neither fire nor water passed through the door.

LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council it was agreed that tenders be invited from selected firms for the reconstruction of the bridge carrying St. John's Hill, Clapham Junction, over the London, Brighton, and South Coast and London and South-Western Railways.

The Improvements Committee reported that the London School of Economics in Clare Market is about to be extended by the erection of a permanent wing on adjoining land, having an area of 8,340sq.ft. The amount to be debited to the Education Committee had been agreed upon at £25,500. It was agreed to sell the freehold of the plot of land in Mare-street, Hackney, adjoining the police station, to Mr. M. Miller, for £1,050. The site has an area of 4,600sq.ft. and a frontage of 132ft. 6in. to Mare-street.

On the recommendation of the Local Grant Committee, the offer of the United Grand Lodge of England to present to the Council portions of the façade of No. 55 and 56, Great Queen-street, Kingsway, and to contribute towards the cost of taking down and removing them was accepted with thanks. The staircase will be exhibited in the Geffrye Museum, and the selected portions of the façade will be re-erected in Geffrye's garden.

The Highways Committee reported with regret that Mr. J. Shepherd, electrical assistant in the tramways department, has resigned. Mr. Shepherd was appointed to his present position on November 1, 1910, having previously held the position of assistant electrical engineer. It was intimated that Mr. Shepherd has purchased the business of a consulting engineer, which he desires to take over on July 1, 1915.

Mr. Edward Charles John Elling, architect, of 9, Queen Victoria-street, E.C., and Stroud Green, N., died on the 27th ult., aged 53.

OBITUARY.

We regret to announce the death of Mr. Edgar George Cusson Down, A.R.I.B.A., of Castle Chambers, High-street, and Romilly Crescent, Cardiff, a past-president, and previously hon. secretary, of the South Wales and Monmouthshire Architects' Society. He had erected many business premises in Cardiff and its vicinity, and had been successful in several competitions, including that for the schools in the suburb of Ely, and that for the Presbyterian Church in Cathedral-road, Llandaff. He joined the Royal Institute of British Architects as an Associate in 1896.

Mr. W. T. Grewcock, A.R.I.B.A., of St. Martin's Chambers, New-street, Leicester, died at Bournemouth on Thursday in last week, aged 47. He was a member of the council of the Leicester and Leicestershire Society of Architects, and had for some years served as the hon. secretary and treasurer of that society. He had carried out many business premises and domestic buildings in Leicester and its vicinity, and also rebuilt the workhouse and erected a sanatorium at Hinckley. His Associateship of the R.I.B.A. dated from 1896.

The first member of the staff of the Birmingham Corporation to give his life for his country is Captain Fountain O. C. Nash, of the 5th Battalion (Territorial) of the Northumberland Fusiliers, who when in Birmingham was the chief town-planning assistant in the city surveyor's department. Mr. Nash was the son of an artist and the grandson of James Nash, the author of the "Famous Homes of England." He was originally the assistant surveyor to the borough engineer at Newcastle-on-Tyne, and in November, 1913, he was appointed chief town-planning assistant in the department of the Birmingham City Surveyor. He was a smart and able official, and made a good impression in the town-planning department, where his ability as a surveyor and architect was speedily recognised by the town-planning committee, and all who were associated with the development of the schemes of town-planning. When the war broke out he was called up to his regiment, for he had been actively identified with the 5th Battalion (Territorials) of the Northumberland Fusiliers for some few years, and he went with his battalion on active service as a captain. Captain Nash, who lived at 88, Church-road, Moseley, and was 34 years of age, leaves a widow and two children.

Mr. Thomas Booth Farrington, civil engineer, died at his residence, Plas Madoc, Llandudno, on Sunday, aged 61. A native of Chorley, Mr. Farrington was articled to Messrs. Maxwell and Tuke, the well-known Manchester architects. Among the undertakings with which he was connected for that firm was the Winter Gardens, Southport, at the construction of which he was one of the resident engineers. Afterwards he was sent by the firm to lay out the new seaside resort of St. Annes-on-the-Sea. Having planned the streets and promenade and designed a sewerage system for St. Annes, and seen the resort well started on its career of development, Mr. Farrington received the appointment of architect and engineer to the Pwllcrochan Estate Company, Colwyn Bay, on whose behalf he designed and laid out that Welsh coast resort. As in the former case, he arrived at Colwyn Bay when very few houses had been built, and when there was a toll-gate across the main road above the road to the new station. After some years at Colwyn Bay, Mr. Farrington was appointed borough engineer and surveyor to the Conway Corporation, an office which he held for twenty years. He had planned a waterworks system for Colwyn Bay, and the rapid growth of both towns making a larger supply essential, he was engaged by the Conway and Colwyn Bay Joint Water Supply Board to act as water engineer. Cowlyd Lake was acquired and mains were laid to all parts of the district. Several problems of a novel kind had to be mastered by the engineer, including the carrying of the pipes across the Conway estuary, which was

A NEW FIRE-RESISTING DOOR.

Messrs. Chubb and Son's Lock and Safe Co., Ltd., have introduced an entirely new kind of fire-resisting door, designed on scientific principles for production by modern constructional methods. There is a minimum of steel, which conducts heat, and a maximum of non-conducting concrete filling. The steel casing fulfils several objects:—It forms a hard skin capable of being nicely painted or otherwise finished. It encloses compactly the concrete, which cannot break away even if its surface become friable under excessive heat. It protects the concrete from the force of water from the fire-hose. It provides small apertures at each indentation through which escape gases or steam generated by fire and water. It is a correctly disposed tension member for both surfaces to resist the tendency to distortion, common to nearly all materials under the stresses of heat followed by rapid cooling.

The concrete filling contains a selected calcined aggregate of little weight. It is well proportioned, and it sets very hard. The door has a uniform thickness of two inches, in this being greatly superior to other doors with panels three-quarters of an inch or less in thickness, which offer least resistance to the passage of heat where the heat may be greatest. To check the spread of heat there must be thickness in the resisting slab. To reduce thickness is to reduce efficiency. The door is a stanchion of great strength; it is also a beam of great strength. Much of its strength is due to the fact that the plates are anchored at every indentation to the rods reinforcing the concrete.

The British Fire Prevention Committee has subjected one of these doors to their

accomplished by means of a specially-designed suspension bridge between Telford's and Robert Stephenson's structures at Conway. Mr. Farrington remained the Cowlyd Board's engineer up to his death. His ability and knowledge of water engineering led to an increasing demand for his services, but unfortunately his health gave way some fifteen years ago. He was in great request as an arbitrator, among the arbitrations in respect of which he was engaged being that relating to Rivington Waterworks, in which he represented Sir W. H. Lever. He carried out water and sewerage schemes for many local authorities, and one of the works which he designed and executed was a huge dam across a valley at Caerwys, which formed a fishing-lake for Earl Denbigh. He leaves a widow, three daughters, and two sons.

PROFESSIONAL AND TRADE SOCIETIES.

THE ARCHITECTURAL ASSOCIATION OF IRELAND. The annual general meeting of the Architectural Association of Ireland was held on April 27, at 15, South Frederick-lane. The retiring president, Mr. H. Allberry, in his valedictory address, dealt with the effects of the war upon the progress of the association. He alluded with pride to the number of members who had joined the Colours, and remarked that, in spite of all difficulties, the association had enjoyed a successful season and preserved its stability. In their eighteenth annual report, the committee expressed regret that the progress of the past few years had not been fully maintained. In common with other professional societies, the Architectural Association had found its activities curtailed in various directions by the effects of the war. The total number of members was now 110. In the absence of many of the younger members on active service, the committee ultimately decided to abandon the class section of the programme. The committee regretted that several spaces in the museum of building materials were still vacant. The hon. librarian reported that the number of books borrowed was 19½ per cent., and new books were greatly in demand. The lending library had been completely revised, and books of an obsolete character transferred to the reference library, partly replaced by modern books. As a result of frequent interchange of views between the officials of the Irish and English Architectural Associations, a mutually satisfactory arrangement was reached, under which members of each receive certain direct advantages from the other society, including a common employment register. The following members had felt it their duty, and had been able, to join the Colours:—Messrs. A. W. Reid, F. Shepherd, C. H. Mitchell, A. Brady, C. D. B. Ward, W. MacLaren, P. L. Dickinson, H. S. F. Clay, D. M. Turner, Cyril Keefe, and J. E. Burke. The latter had been mentioned in despatches. The prizes were awarded as follows:—Institute prize, and also Downes bronze medal, Louis F. Giron; special prize, Thos. Walsh; President's prize, A. E. Jones; Vice-president's prize, W. A. Dixon. On the walls of the meeting-room were displayed the drawings submitted for the prize competition by students. The work was of excellent quality, surpassing in merit, indeed, that seen on previous similar occasions. The officials elected for the ensuing year are:—President: H. G. Leask. Vice-president: Hubert J. Lundy. Hon. secretaries: L. F. Giron and W. A. Dixon. Hon. librarian: T. L. Cullimore. Hon. treasurer: G. F. Beckett. Committee: H. Allberry, J. Geoghegan, F. Hayes, W. A. Scott, T. F. Strahan, A. E. Jones, B. V. Callaghan, and G. G. Lynes.

THE COUNTESS OF RICHMOND'S TOMB, HENRY VII.'S CHAPEL.—At the last meeting of the Society of Antiquaries, Dr. Philip Norman presiding, the Master of St. John's College, Cambridge, read a paper on the original contract for the tomb of the Lady Margaret Beaufort at Westminster Abbey. It was until recently a tradition

rather than an established fact, he said, that the tomb was the work of Pietro Torregiano; but the contract and other documents of St. John's placed the question beyond doubt. He was inclined to think that the tomb, which was to cost £400, was designed by more than one mind—Prior Bolton, of St. Bartholomew's, may have had something to do with it—and was handed over to Torregiano to carry out. The documents which the Master exhibited included the contract with Torregiano, the college book of accounts, showing the payment of £4 10s. to Cornelius Symondson for "making a grate of Irone at Westmr. over my lady the King's mother and vijth"; and the contract for the "grate" between Nicholas Metcalf, the Master of St. John's, William Longford, the vice-master, and Cornelius Symondson, smith, of the parish of St. Clement Danes.

THE LIVERPOOL ARCHITECTURAL SOCIETY (INCORPORATED).—The annual report for the year 1914-1915 was approved and adopted at the annual general meeting, Monday, April 26, 1915. The present membership of the society consists of 64 Fellows and 48 Associates, a total of 112. There are also 3 Hon. Fellows, 9 Hon. Associates, and 8 Students. At the present time not less than eighteen members, three of whom are also members of the council, are known to be serving in His Majesty's Army. The attention of the council having been drawn to a recommendation of the Liverpool Education Authority to appoint an architect from a distant part of the county to be architect for a local school building, the council approached the Education Committee with regard thereto. The Education Committee replied that they could not see their way to comply with the suggestion made so far as the particular appointment was concerned, but in regard to other appointments they would give consideration to the representations that had been made. The council, through their town-planning committee, have kept in touch with the procedure of several local authorities, who have sought powers under the Town-planning Act. At the request of the association, the council received a deputation of the Liverpool Master Builders' Association, for the purpose of giving further consideration to the difficulties in connection with "day sheets." The council definitely declined to approve of the proposals submitted by the association. The master plumbers having agreed among themselves to charge a uniform rate for certain items of work, it has been arranged between the association and the local manufacturers of plumbers' fittings, that the latter, when submitting quotations to architects, shall include, and shall state on their tenders that they include, a sum of 10 per cent. on the price of the goods as fixers' charges. The council took grave exception to the character of a circular letter issued by the association.

MANCHESTER SOCIETY OF ARCHITECTS.—The annual meeting of this society was held on Wednesday in last week, the 28th ult. The fifty-first annual report of the council showed that the aggregate membership is 271—viz., 118 Fellows, 111 Associates, and 42 Students—as against a membership of 272 at the date of the last report, a decrease of one. The resignations of two Fellows, two Associates, and two Students have been accepted, and five members were struck off the roll of membership for non-payment of subscriptions. The council deeply regrets to record the death last year of Mr. John Brooke, a past-president of the society. The exact demarcation of the boundaries of the provinces allotted by the R.I.B.A. to the Allied Societies has been finally agreed upon. On 9th July last a deputation from the council of the Manchester Society of Architects met a sub-committee of the Manchester Education Committee, and the President submitted for their consideration the claims of architects in private practice in this city for some share in the work of designing new schools, in place of having the whole of this work done by an official staff. The deputation urged that the duties of an official architect should be

almost entirely of an advisory and consultative nature, and that he should not be entrusted with the charge of public works of importance. After considering the subject, the Manchester Education Committee passed a resolution stating that they were unable to recommend any departure from the policy already adopted by the Education Committee in regard to the designing of schools. At a subsequent meeting of the city council the question of official architecture was debated, and it was decided to appoint a committee to inquire into the whole question. So far as is known, 38 members of the society have in one capacity or another joined His Majesty's Forces, of whom five were Fellows (Messrs. Q. M. Bluhm, A. E. Corbett, C. Harold Heathcote, Claude Paterson, and Gerald Sanville), 22 were Associates, and 11 were Students. The outbreak of war decided the council to forego the holding of the annual dinner last year, and also to postpone the celebration of the society's jubilee, which was attained on April 8 last. The council has, at the request of the R.I.B.A., formed a local architects' war committee which is acting in conjunction with the principal one in London. At a special meeting of members, held on January 3, the question of the old infirmary site in Piccadilly, which has been vacant for over eight years, was reconsidered, and the following resolution, which has been communicated to the Manchester Corporation, was passed:—"That this meeting of the Manchester Society of Architects views with regret the continued delay in dealing with the infirmary site, and is of the opinion that immediate steps should be taken to utilise it by erecting thereon a monumental building." The report having been adopted, the following were elected as the officers and council for the ensuing year:—President: F. B. Dunkerley, F.R.I.B.A. Vice-presidents: J. B. Gass, F.R.I.B.A., and A. W. Hennings, A.R.I.B.A. Hon. secretary: Isaac Taylor, F.R.I.B.A. Assistant hon. secretary: J. T. Halliday, A.R.I.B.A. Members of council: Messrs. John Ely, H. Q. Farmer, W. C. Hardisty, Edward Hewitt, Hugh Healey, P. D. Lodge, A. J. Murgatroyd, Paul Ogden, J. H. Sellers, J. H. Woodhouse, P. S. Worthington, and W. C. Young.

QUANTITY SURVEYING INTRODUCED INTO OHIO.—Following a campaign by civil engineers of St. Louis through their organisation, the city assembly passed an ordinance authorising the mayor, with the approval of the council, to appoint quantity surveyors. The number is not limited. The appointees must be skilled in building construction or estimating. They must give bonds in 10,000dol. Patrons of quantity surveyors, who sustain loss by reason of their negligence, incompetence, or misconduct, can sue on the bond any time in five years. The appointments hold for four years. The charges authorised are the fees agreed upon between surveyor and clients, until a list of fees can be prepared by the Engineers' Club, St. Louis Chapter of the American Institute of Architects, and the Building Industries Association. The results of the St. Louis law will be awaited with lively interest throughout the Middle States by the users of the old competitive system of bidding for contracts. The success of the departure at St. Louis would mean the appearance of a new class of experts in the building field of the city. Supplementing the ordinance of St. Louis, or reinforcing it, a State law is being prepared requiring a detailed quantity list with every architectural and engineering plan.

A Local Government Board inquiry was held at Farnham, Surrey, yesterday (Thursday) by Mr. A. W. Brightmore, touching an application from the council for leave to borrow £15,240 for works of sewage-disposal.

When the consideration of the London County Council Tramways Bill was resumed on Wednesday before a House of Commons Committee, it was announced that, in view of the opposition to the extension of the tramway along Farringdon road to Charterhouse-street, the County Council withdrew that proposal.

COMPETITIONS.

MADRAS.—His Excellency the Governor of Madras is giving a prize for the best design and plan for a house in connection with town-planning, and a committee, appointed by the Madras Municipality, has been appointed to frame conditions for the competition.

CHIPS.

The Middlesbrough Corporation's Bill for constructing a new bridge of 296ft. span over the River Wear has been passed by a Committee of the House of Lords.

The Loughborough Town Council decided on Monday to apply to the Local Government Board for power to borrow £1,250 for the extension of the water-mains to the Knightsthorpe-road district.

A Local Government Board inquiry was held on Tuesday at Newport, Mon., by Mr. P. M. Crosthwaite, into an application by the corporation for sanction to borrow £14,820 for works of sewage-disposal.

The death is announced, at the age of sixty-seven, of Mr. Edward Hetherington, of York, a leading member of the Master Builders' Association of that city, and the largest employer of building labour in York.

The death is announced, at Nailstone, of Mr. William Thorpe. Mr. Thorpe was appointed surveyor to the old Market Bosworth Highway Authority as long ago as 1863, and continued in office up to a few years ago.

On Sunday, in the chapel of Peterhouse, Cambridge, a memorial tablet was unveiled and dedicated to the memory of Sir Richard Solomon, sometime High Commissioner for the Union of South Africa, who died in November, 1913.

An isolation hospital at Bennetts End, Hemel Hempstead, built by the Joint Hospital Board, was formally opened on Wednesday. Messrs. John Saxon Snell and Stanley M. Spoor, of London, were the architects, and Messrs. C. Miskin and Sons, Ltd., of St. Albans, were the contractors.

The President and Council of the Royal Academy have selected the following works for purchase under the terms of the Chantrey bequest:—"A Secret," oil-painting, Fred Appleby; "A Vision of the Sea," oil-painting, Mark Fisher, A.R.A.; "The Bather," statue, marble, Albert Toft.

In the House of Lords, on Tuesday, the Great Central Railway Bill, London, Chatham, and Dover Railway Bill, Metropolitan District Railway Bill, and Doncaster Corporation Bill were read a second time. The Sutton District Water Bill and Liverpool Corporation Bill were read a third time and passed.

Mr. John Stewart, of Balshagray House, Crow-road, Partick, Glasgow, timber merchant, of the Western Saw Mills, Firhill Basin, Glasgow, who died intestate on December 3 last, left personal estate in the United Kingdom valued at £18,142, and administration of his estate has been granted to Mr. John Stewart, jun., of Newark, Laurel Bank, Partick, Glasgow, timber merchant, and two other sons.

At Friday's meeting of the Metropolitan Water Board, gratuities equal in amount to three months' wages were made to the dependents of three of the Board's employees who had lost their lives while on active service. It was reported by the Works and Stores Committee that the Board were at present assisting the Admiralty in the construction of waterworks at various naval establishments, and the War Department in the provision of munitions.

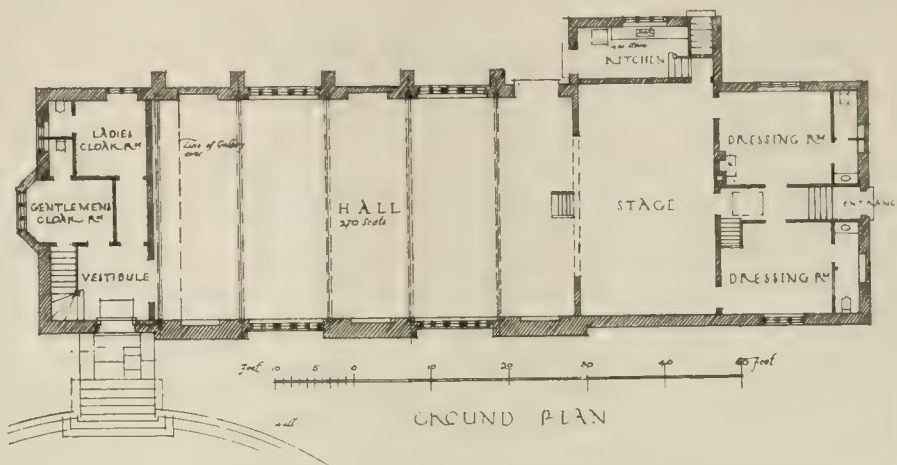
Presiding on Thursday at the annual meeting of the Hampshire Field Club and Archaeological Society at Winchester, Sir William Portal, who was re-elected president, said that about ten days previously there had been a very serious fall of Tudor brickwork outwards from the keep at Basing House, and the bricks were lying about in great masses. It would be well that those bricks should be replaced to prevent other portions of the brickwork of the keep from falling.

The Princess Royal opened on Tuesday the new building of the Hospital for Consumption in Margaret-street, Cavendish-square, erected from designs by Mr. F. M. Elcock, F.R.I.B.A., of Wimpole-street, W. Mr. Boyton, M.P., said the late Duke of Portland had granted the hospital a new lease in 1863 at the low rental of £20. When the lease fell in, a similarly favourable arrangement for 999 years had been made, and the new building erected at a cost of £9,000.

Our Illustrations.

SECOND CHURCH OF CHRIST SCIENTIST, PALACE GARDENS TERRACE, KENSINGTON.

The approved design for the above building is herewith illustrated by two double-page plates, the original drawings being in the present R.A. Exhibition. We alluded to them in our review of the Architectural Gallery last week. The design embodies the requirements of the committee, to secure a church capable of seating 1,000 people, a maximum number of whom shall have a clear view of the platform; a hall to accommodate about 400, with classrooms for the children, adjoining, and a house to contain the church-



THE LIFFORD MEMORIAL HALL, BROADWAY, WORCESTERSHIRE.
Mr. A. N. PRENTICE, F.R.I.B.A., Architect.

room and other offices, with the heating-plant and caretaker's premises, the remaining space to be treated as garden railed off from the street, but open to view. The natural rise of the seating in the church, which, obviating any "gallery" effect, secures ample space beneath for vestibule purposes, one of the requirements of the committee. This disposition also secures quiet to the main body of the church, and dictates the lighting obtained from the large three-light windows high up on three sides of the church, the remaining side being devoted to the platform and organ, with lavatories for males and females, and rooms for readers, ushers, and organist on either side. The structure of the walls will be of Fletton bricks, faced externally and internally with Crowborough or other similar greyish dressings, where indicated, externally; the dome, pendentives, and side vaults of the church, and the ground vaulting of the loggia, being of ferro-concrete, finished externally with asphalt. The church will be very simply treated internally, and any carving will be executed in the concrete or brick facing, the necessary richness of effect being gained by the seating and its upholstery, and the marble-work of the platform. The new church will take the place of the present one on the site, and continuous use will be secured by erecting the new hall, classrooms, and church-house first. The architect is Sir John J. Burnet, R.S.A.

THE LORD WANDSWORTH INSTITUTION, LONG SUTTON, HANTS.

Last week, in our review of the Royal Academy Architectural Gallery, we alluded to this building, of which Mr. E. Guy Dawber, F.R.I.B.A., is the architect, and may further say that the institution is being erected for the education of agricultural students under the will of the late Lord Wandsworth. Nothing like this scheme has hitherto been carried out in this country on such a scale. The farm buildings and stables being put up in conjunction with the institution from the plans of Mr. Reginald Blomfield, R.A., are represented by the large model now on view at the Royal Academy. The key plan which accompanies Mr. Guy

Dawber's perspective, reproduced in one of our double-page plates, serves to indicate the extent of the institution buildings, in the centre of which the great hall is situate, with houses proposed to be built on either hand of the great quadrangle for the accommodation of resident students.

THE LIFFORD MEMORIAL HALL, BROADWAY.

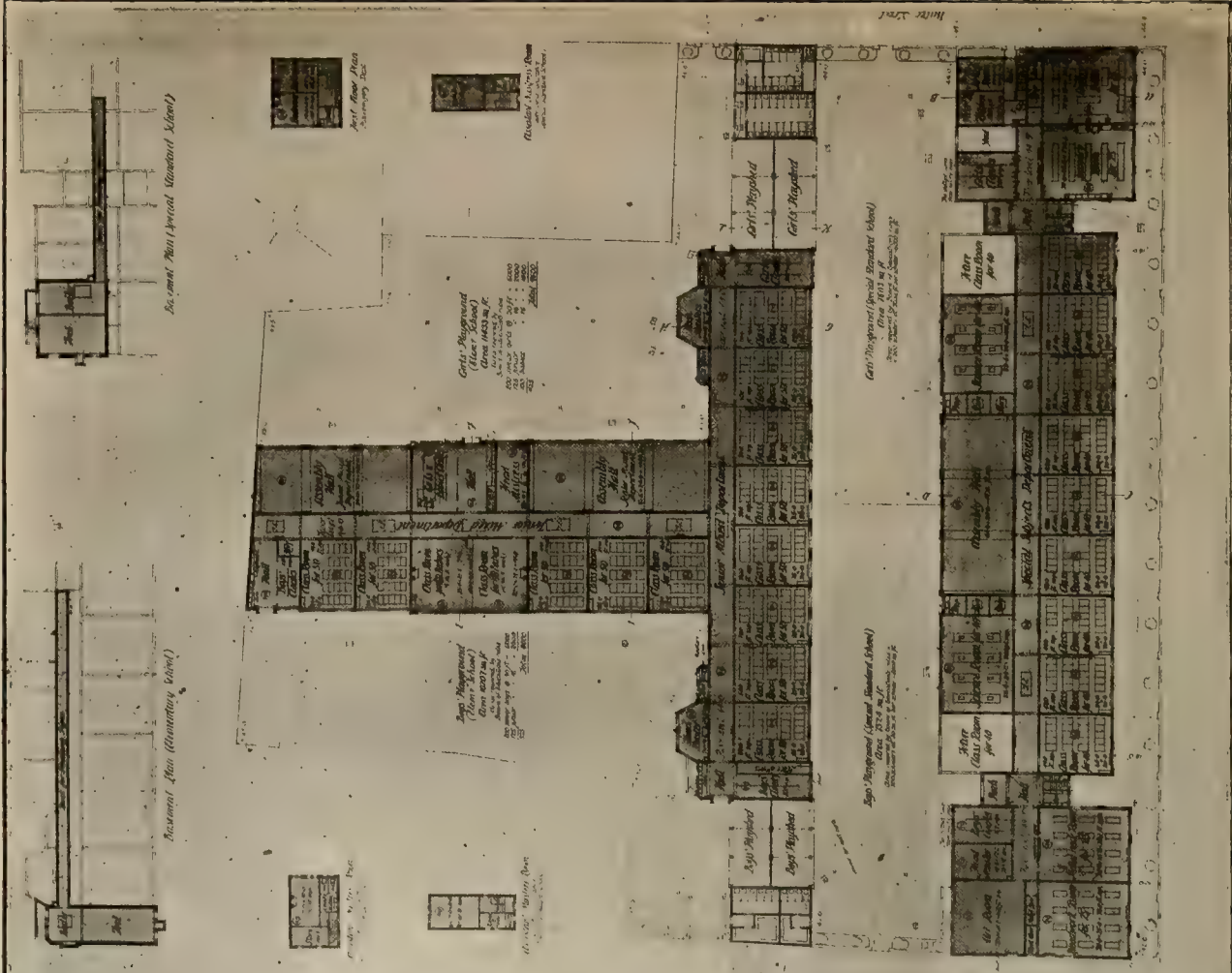
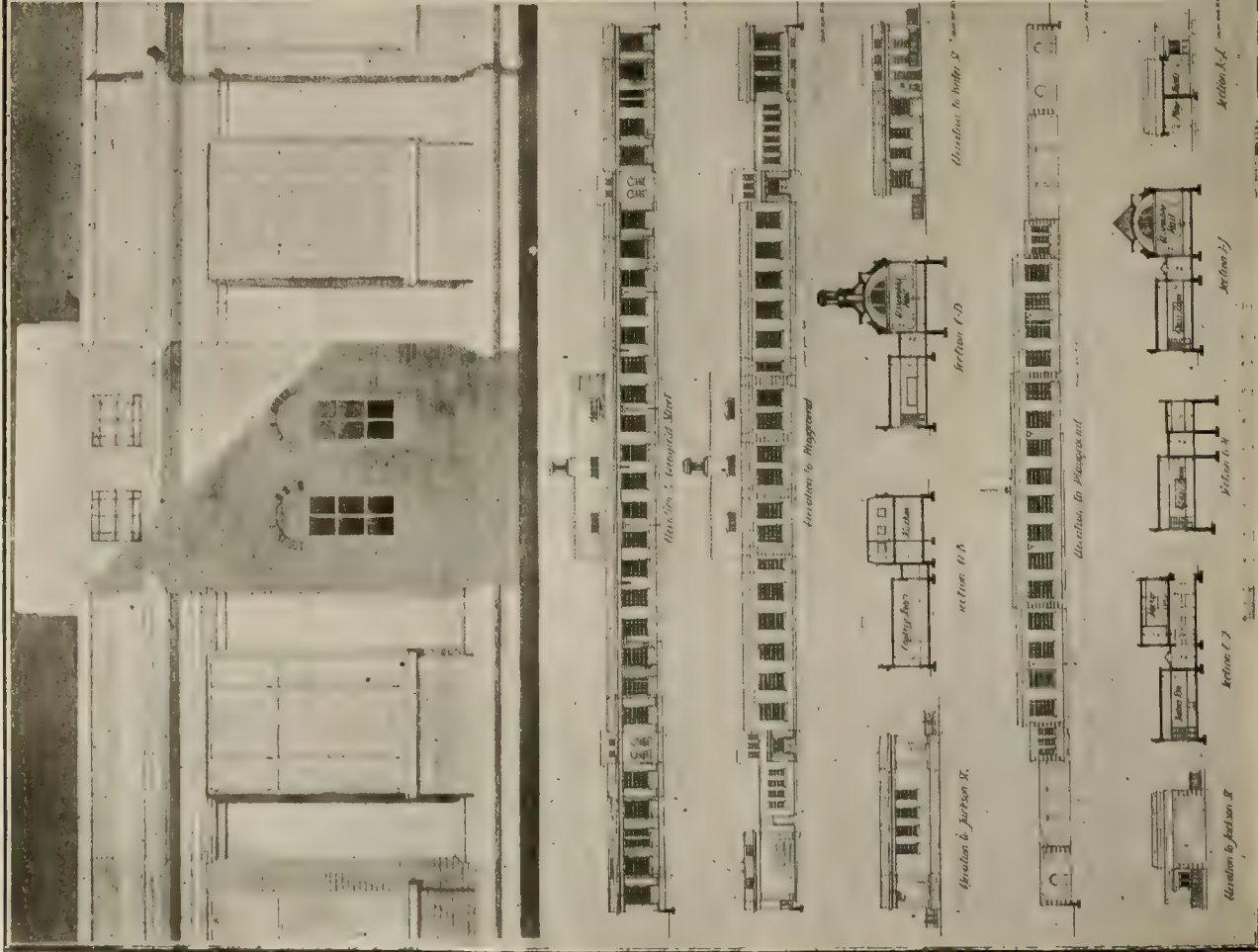
This little building, now in course of erection at Broadway, Worcestershire, was the result of a limited competition amongst a few architects who had previously executed work in the neighbourhood, Sir Aston Webb having kindly consented to act as honorary assessor. The contract has been intrusted to Messrs. Espley and Co., Limited, of Evesham, and the amount of their tender was

£1,880. The cost is being defrayed by local subscriptions, and the building is intended to be used as a village-hall for Broadway, in memory of the late Lord Lifford, who was an old resident, and took such an active interest in preserving the local character of this typical old Cotswold village. One of the principal conditions of the competition was, that ample stage accommodation should be provided for theatrical performances, and convenient dressing-rooms, and a store for scenery placed over. There is also a large chair-store situated in a cellar under the stage. The whole is being carried out from the design of Mr. A. N. Prentice, F.R.I.B.A. Reproductions of the plan and perspective view of the building are given in this issue. The original perspective view is now on exhibition at the Royal Academy, drawn by the architect.

NEW HIGHER ELEMENTARY OR SPECIAL STUDENTS' SCHOOL, HYDE, LANCs.

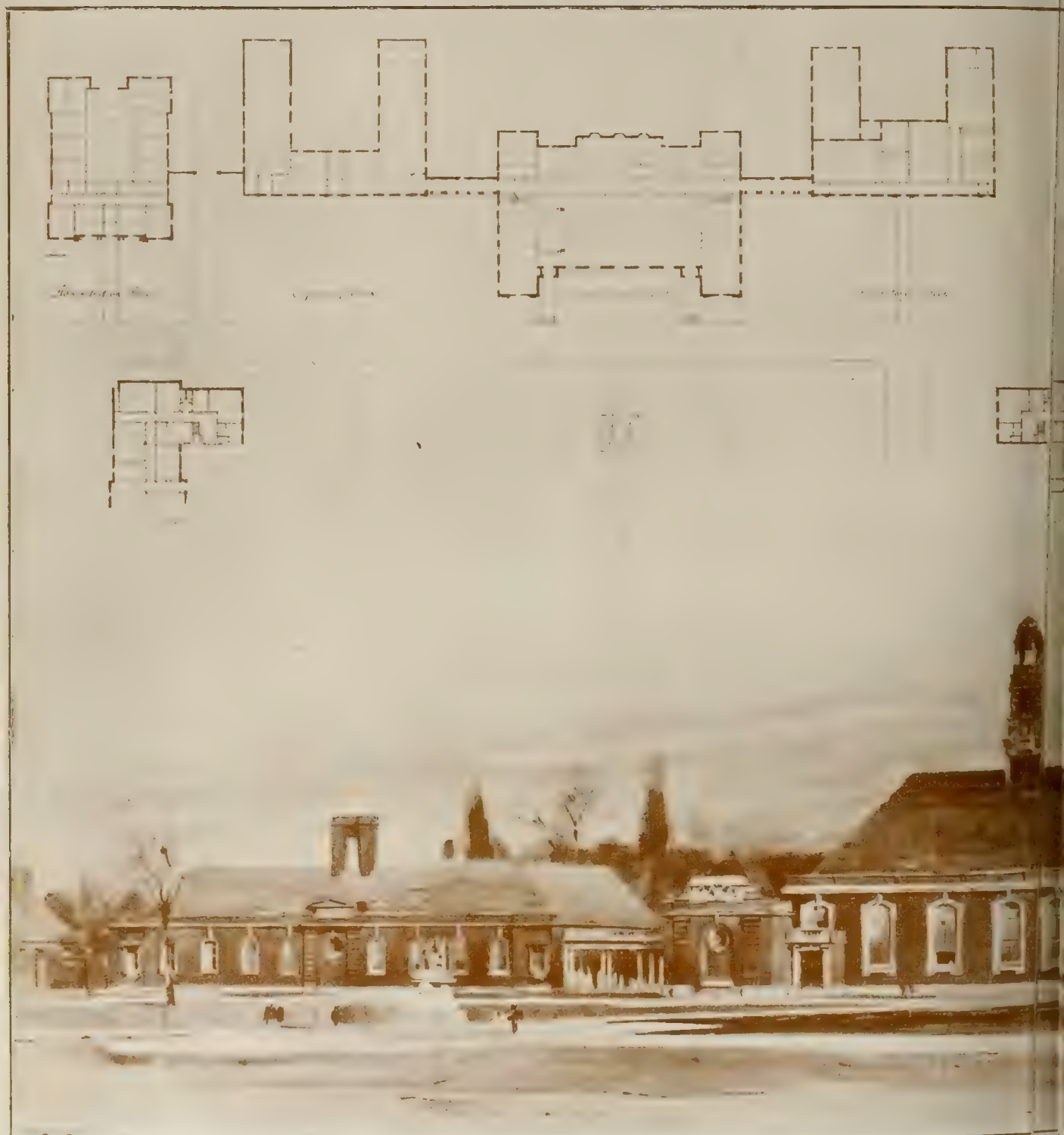
SELECTED DESIGN.

This forms really two distinct schools, a higher elementary or special standards school for 400 scholars, and an elementary school with accommodation for 400 seniors and 350 juniors. The site is in the centre of the town, adjoining the Town Hall. The lay-out of the plan was governed to a great extent by the fact that the rear portion of the site is surrounded by buildings with rights of light over the site. The conditions of the competition asked that all entrances should be from the side streets. The special standards school will contain, in addition to the classrooms and hall, two science-rooms, art-room, woodwork-room, metal work-room, cookery-room, laundry and demonstration cottage for teaching housewifery. The walls will be 11in. cavity, the facings being of Ravenshead rustic bricks, with stone dressings. The assembly-hall will be roofed with thick grey Burlington slates, laid in diminishing courses, all other roofs being flat ones of reinforced concrete. The estimated cost of the buildings is about £21,000, the architect being Mr. H. Quentary Farmer, of Stalybridge and Coventry.



SELECTED DESIGN: ELEMENTARY AND SPECIAL STANDARD SCHOOLS, GREENFIELD STREET, HYDE, LANCs.
MR. H. QUENTERY FARMER, Architect.





THE LORD WANDSWORTH INSTITUTION, LONG ST.

MR. E. GUY DABER

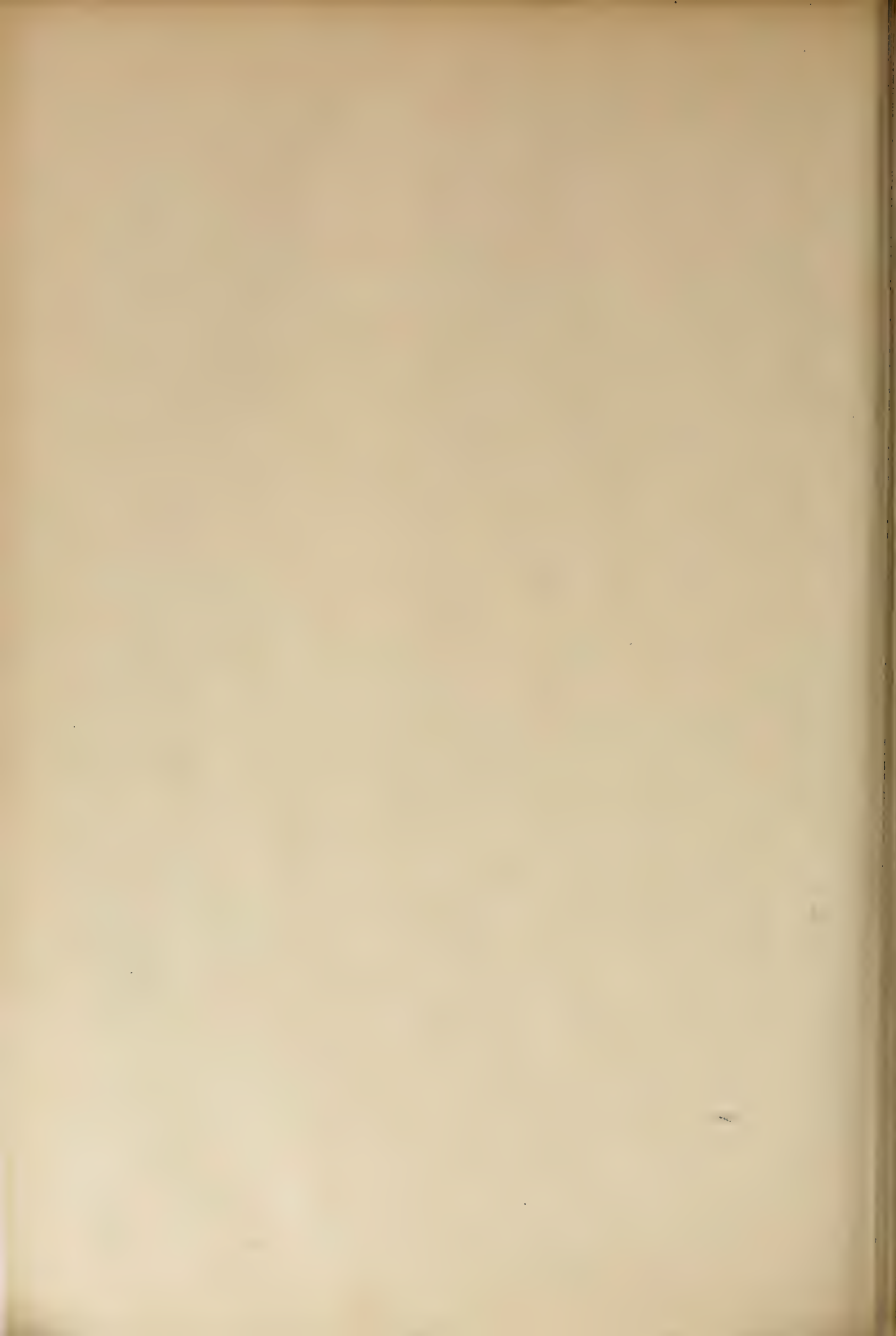
MAY 7, 1915.

*The Lord Wandsworth Institution, Hampshire.
A Prospect from the South.*

By James F. B. A.



ON HAMPSHIRE: A PROSPECT FROM THE SOUTH.
F. H. B. A., Architect.



531-5784





SECOND CHURCH OF CHRIST SCIENTIST, PALACE GARDENS FRI

MAY 7, 1915.



F. KENSINGTON.—Sir JOHN J. BURNET, LL.D., R.S.A., F.R.I.B.A., Architect.

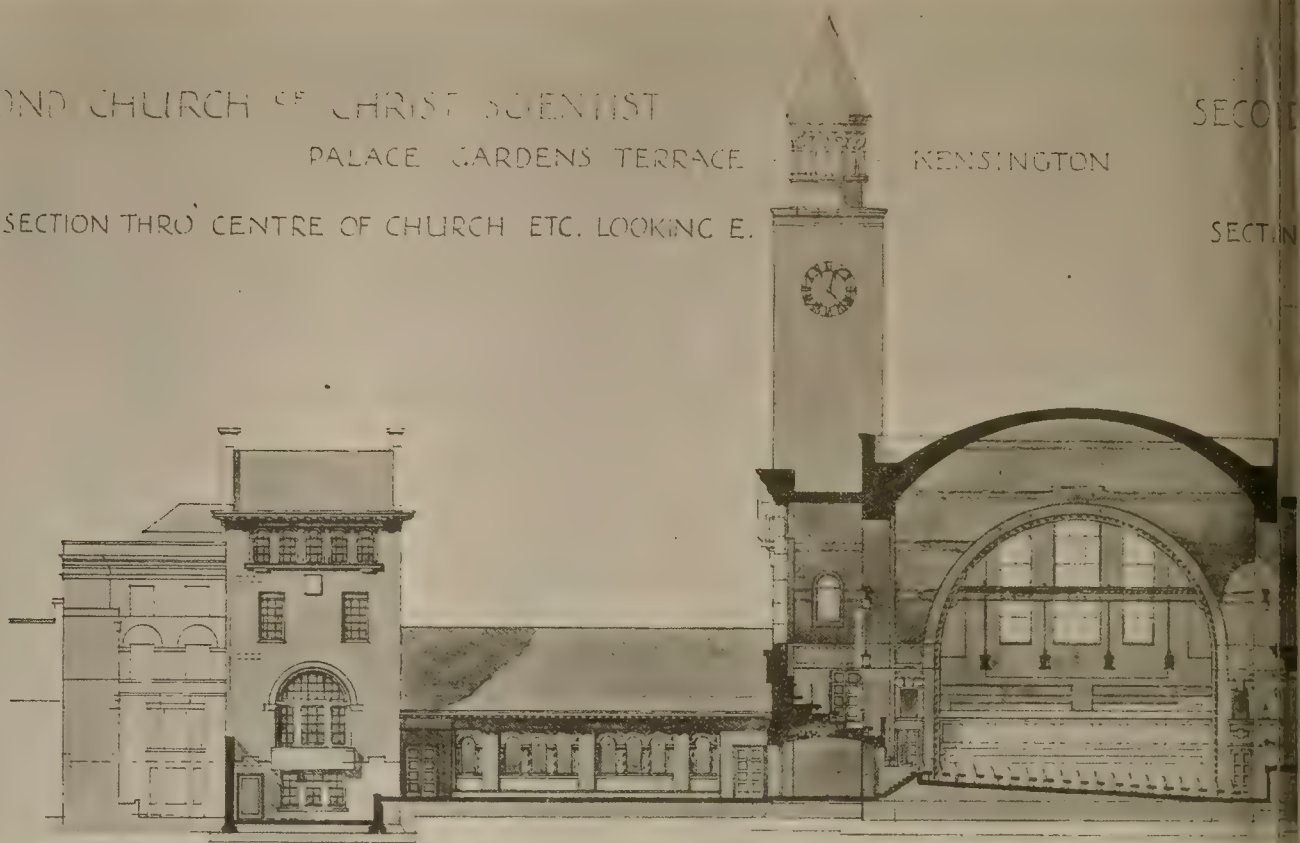


SECOND CHURCH OF CHRIST SCIENTIST

PALACE GARDENS TERRACE

KENSINGTON

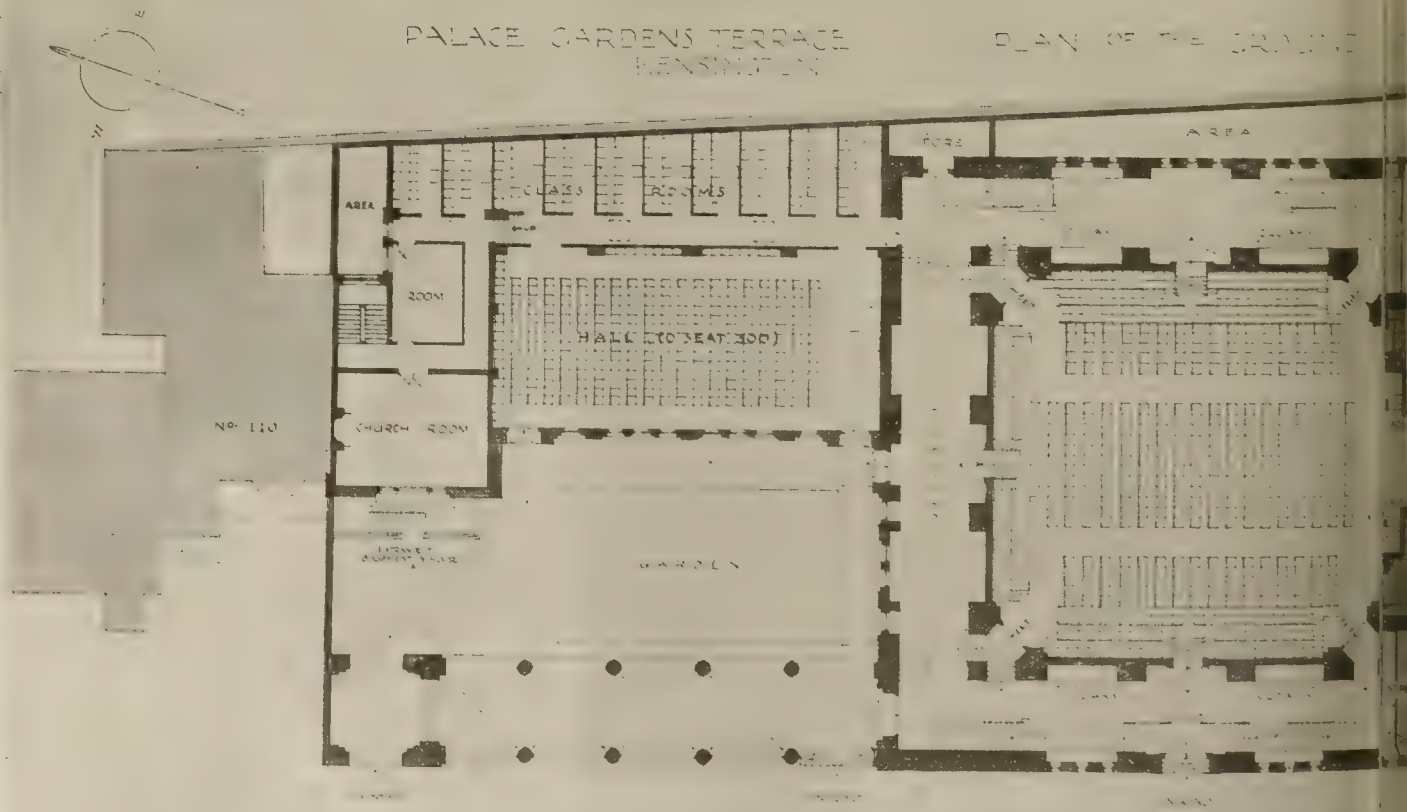
SECTION THRO' CENTRE OF CHURCH ETC. LOOKING E.



SECOND CHURCH OF CHRIST SCIENTIST

PALACE GARDENS TERRACE
KENSINGTON

PLAN OF THE GROUND

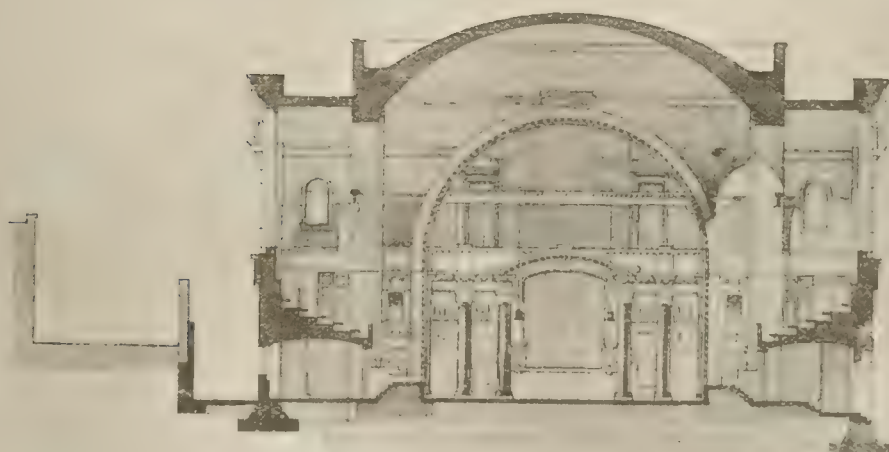


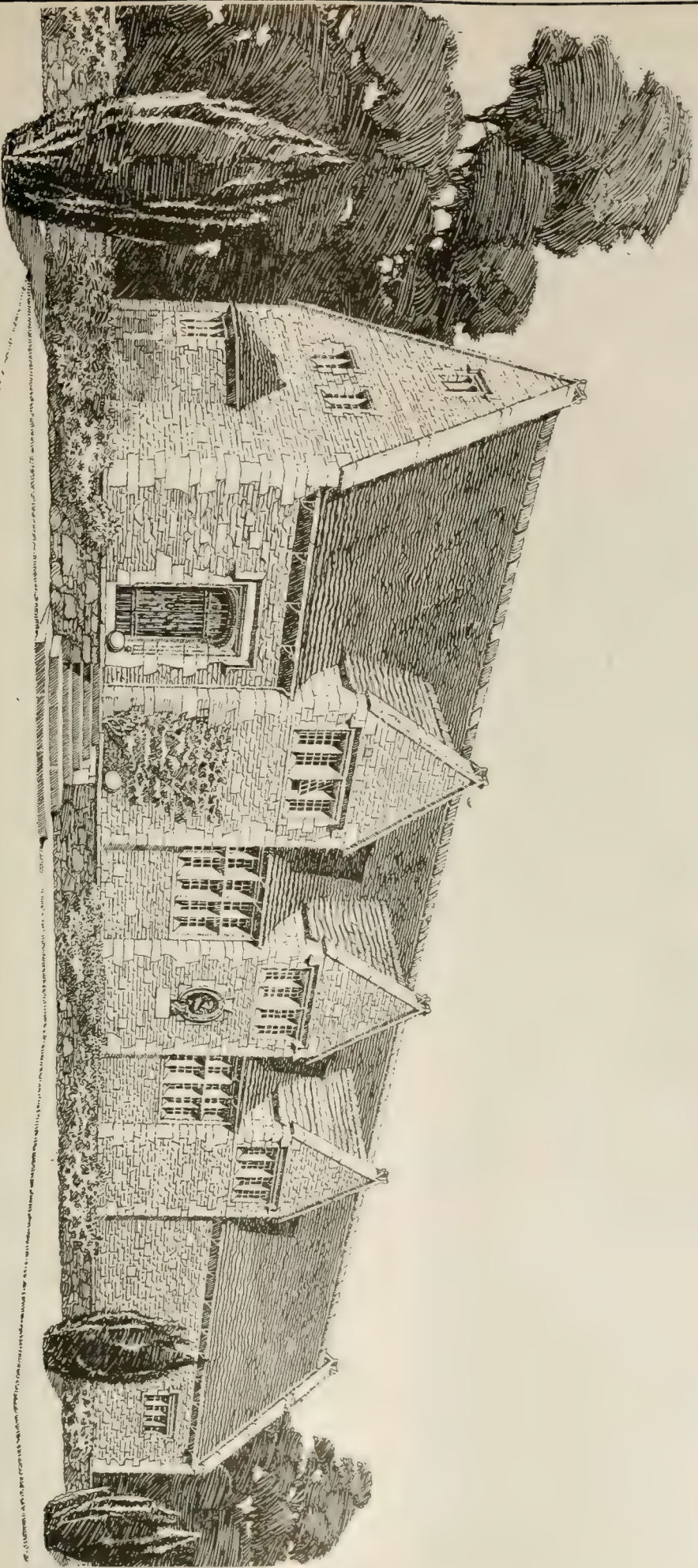
MAY 7 1915.

CHURCH OF CHRIST SCIENTIST
PALACE - GARDENS TERRACE - KENSINGTON
D HALL AND GARDEN SHEWING N. SIDE OF CHURCH



ELEVATION OF THE CHURCH OF CHRIST SCIENTIST
PALACE - GARDENS TERRACE - KENSINGTON
SECTION THROUGH CENTRE OF CHURCH LOOKING NORTH





THE BUILDING NEWS, MAY 7, 1915.

Corrente Calamo.

With the exception of the proposed additional drink duties there is no new taxation in the eleven hundred and thirty-two million Budget *as yet*. The truth, of course, is that the real Budget is postponed till later in the year, when possibly some more tangible basis of needs and expenditure can be arrived at. It goes without saying that there is no fulfilment of the promises made to relieve builders of the exceptional and unfair burdens they labour under. The first to feel the lash, they will probably be the last to get relief, and their only consolation is that they are contributing in a higher degree than any others to the nation's needs. The people who are making huge war profits will still pile them up, and the rumoured extension of the income-tax to the wage-earners has not matured. Possibly Mr. Lloyd George knew that would be impracticable. It was stated in one daily paper a week or two ago that in the North the return of wages which every employer is ordered to make is unknown, simply because the authorities know that the workmen, some of whom, we are told, are making five pounds a week and upwards, would never pay. Whether this is so or not we cannot say; but of one thing we feel certain, and that is, that if the war lasts indefinitely, as it seems likely to do, very different bases of taxation will have to be found under which the great majority of the taxpayers may contribute more fairly than they are compelled to do at present.

We sincerely hope Mr. Lloyd George's attempts to check drunkenness may succeed; but we are not sanguine. We have no fault to find with the increased beer and spirit duties; they will not hurt decent people who, like ourselves, have followed the King's example, and are abstaining "during the war." It is no great hardship, and habit may very likely insure the permanence of the pledge in many cases. But whether the average male or female sot of any class will be deterred from soaking himself or herself into degrading and disgusting helplessness, while high wages go into the publican's till for still further diluted and dearer potations, remains to be seen. We hope more from the promised control of the liquor dens. Good liquor, which, in moderation, in our opinion, harms no one, is to be obtained at few of them, and the appointments and associations of nearly all are incentives to excess, and repulsive to the moderate drinker, who honestly wants to refresh and not fuddle himself. That any compensation should be paid for closing such is simply robbery of the general taxpayer. We shall be sorry if the importation of the light and wholesome French wines is diminished. The gradual extension of Mr. Gladstone's wise policy would by this time have made them still cheaper, and contributed more and more to their substitution for the malted liquors which stupefy before they slake thirst, and for the vile spirits which ruin health and destroy moral control. Long ere this, we fancy, if a decent glass of claret could have been obtainable with the light lunch which hundreds of thousands take daily at the A.B.C. and similar restaurants, many more would have deserted the out-of-date publican for the decent accommodation and prompt service which he or his backers have long ceased to afford, because the mere tipplers at the bars paid better—or he thought so.

So far the union officials have not countenanced the strike on Monday of the 2,000 scaffolders at the Government's new colony for the workers of the Arsenal at Well Hall, Woolwich. These men "downed tools" without a moment's notice, demanding an extra penny an hour on the very good wages they are getting. There is some difference of opinion as to whether the Government or the contractors are attacked. To save the delay of preparing estimates when the housing scheme was decided upon, the Government made arrangements with the contractors (Messrs. Mowlem and Co. and Messrs. Leslie and Co.) whereby they carry out the work, and submit to the Government periodically accounts of wages and all other expenditure on the work. The Government then pays to the contractors these amounts, plus a percentage as to the contractors' profits. Thus the contractors could hardly be expected to concede the extra 1d. per hour demanded without an agreement with the Government. On the other hand, the view of the Government officials is that the men are employed by the contractors, and, therefore, should apply direct to them. Till this point was decided, and remembering that the urgency of the work is for the benefit of other workers, and certainly the strike was a piece of wanton and unpatriotic precipitancy. The men have since returned to work pending arbitration.

After long consideration, the Science Standing Committee of the R.I.B.A. have submitted to the Council of that body their views as to what a specification should be so far as fir timber is concerned. This is receiving the careful consideration of the Institute of Builders, to whom a copy has been sent. It is in some ways an improvement upon the out-of-date specification commonly used by architects. But the suggestion that the contractor should "give to the architect a guarantee as to the time and manner of the seasoning of timber and deals for carpenter's and joiner's work, and be entirely responsible for any defects in the building resulting from, or arising out of, any want of proper seasoning, or from dry-rot, which may develop in the building within a period of six years from the time of completion," seems a drastic one. As regards dry-rot especially.

Boswell's house in Great Queen-street is now in process of demolition to make room for the extension of the Freemasons' Hall. The effort made to preserve the buildings, which had some interest both as regards their literary and their architectural associations, was found impracticable. The premises, which were known as Bristol House, and afterwards as Boswell House, originally formed the western portion of a large mansion built in 1637. The designer is believed to have been John Webb, a pupil of Inigo Jones, and among those who resided in the mansion before or after its division were John and George Digby, the first and second Earls of Bristol, politicians of the Stuart period; Thomas Fairfax, third Baron Fairfax, Commander-in-Chief from 1645 to 1650; William Cavendish, third Earl of Devonshire; Robert Spencer, second Earl of Sunderland, Lord President of the Council in the reign of James II.; Henry Howard, seventh Duke of Norfolk; and James Boswell. An offer having been made by Grand Lodge to present portions of the

façade and the staircase to the London County Council, the Museum Committee recommend acceptance of the gift. It is proposed to re-erect the façade in Geffrye's Garden, and to exhibit the staircase in the Geffrye Museum, Hoxton.

The secretary of the Lisbon Chamber of Commerce, 26, Exchange-street East, Liverpool, writes us inviting the attention of readers interested to an accompanying note upon Anglo-Portuguese trade relations, with special reference to the recent treaty between Great Britain and Portugal in respect of commerce and navigation, and to the list of manufactured goods in which a profitable and expanding trade might be done. The commodities for which a demand exists in Portugal will be found marked off in the list, and the secretary would be glad to receive, for the information of principals in Lisbon, wholesale catalogues of goods for export, with a memorandum of trade terms in the event of business being done. The list includes copper goods, corrugated-iron sheeting, electric goods, locomotives, steel goods, paints, varnishes, school slates, etc., among those our readers can supply.

In their report, issued last Wednesday night, the departmental committee appointed to investigate the danger to house-painters attending the use of paints containing lead, recommend that the importation, sale, or use of any paint material which contains more than 5 per cent. of its dry weight of a soluble lead compound should be prohibited by law. There would necessarily be exemptions for certain special classes of colours, such as those used by artists. To give adequate time for paint-grinders and others to secure supplies of non-poisonous materials, and to facilitate the introduction of modifications in painting methods, it is suggested that the proposed restriction should not take effect for three years from the date of the report. Mr. W. G. Sutherland, secretary of the National Association of Master Painters and Decorators, dissents from the finding of his colleagues, and recommends that an attempt should be made to deal with the evil of lead-poisoning by regulations. He asserts that prohibition would involve the crippling of a large industry, the destruction of almost the whole of the plant engaged in its operations, and the turning adrift of a large body of workmen.

The Manchester City Surveyor's alleged dismissal of two members of his staff because they would not enlist, which, as we stated on this page last week, was referred for inquiry to a committee, came before the council on Wednesday, when, in reply to a question by Mr. Whiteley, who suggested that the matter had been taken out of that committee's hands, the Town Clerk read the committee's minute, which stated that it had referred the matter to its chairman and deputy chairman for conference with the surveyor and report thereon. Councillor Ross Clyne thereon moved that the minutes be referred back. He had no faith in the members of the sub-committee, because they had expressed themselves in favour of the City Surveyor. Mr. Derwent Simpson, the chairman of the town-hall committee, and Sir Charles Behrens, the deputy chairman, objected to the assertion of Mr. Clyne that they had declared themselves in favour of the City Surveyor. Mr. Ross Clyne said

that in his opinion the whole trouble had arisen from the unfortunate policy of keeping information from the Press. The whole position had been made worse than it need have been by "this horrible policy of bottling up." Sir Charles Behrens: "There has been no bottling up." Alderman Abbott said it would satisfy him if the Town Clerk could assure the council that the men whose cases were under consideration would remain in the employ of the corporation until it was decided by the committee or the council to reduce the staff. The Town Clerk: "What has been done amounts to a suspension of these men. If the town-hall committee confirm the act of the City Surveyor, then their dismissal will date back to the first day of suspension. If the town-hall committee do not confirm it the men will remain in your employ." Mr. R. J. Davies supported the amendment, on the ground that the City Surveyor's action amounted to economic conscription. The amendment was defeated, so that the matter remains before the special sub-committee.

Intercommunication.

REPLIES.

[13140].—COPPER SIGN.—Probably the quickest and safest way is to well rub the sign with turpentine or benzine. A mixture of potash and lime is effective, but slower in action.—Kappa.

[13141].—COPPER SIGN.—First a strong application of soft-soap, then after 24 hours wash off with a strong solution of hot soda-water, and complete with petrol rag, should give "Shinio" satisfaction.—James Bromley.

[13141].—DUST-PROOF FIREPROOF ROOF.—It is not clear from query what is required. If protection is desired against ingress of dust from the outside, then I imagine querist will more readily devise means according to his circumstances than his informants. If the accumulation of dust on, or the detachment of particles from, the asbestos slates is feared, I should advise going over the inside with boiled oil or varnish.—O. C. T.

[13141].—DUST-PROOF FIREPROOF ROOF.—"Brân" should find either of the following give satisfaction:—Waterproof sheeting, secured with copper nails on fillets to under side of roof; or bed the edges of asbestos slates (to a 1½ in. lap), with mastic composed of one part red-lead, one part well-washed, dried, sharp-gritted pit-sand in boiled linseed-oil. The 1½ in. margin under each slate to have one coat of linseed-oil previous to bedding and nailing.—James Bromley, Rothwell Estate Office, Miller Arcade, Preston, Lancs.

[We award the Guinea to Mr. James Bromley.]

A fire occurred at the Congregational Church, Weck-street, Maidstone, on Tuesday, and in a very short time the whole building, which is the largest Nonconformist place of worship in the town, was gutted.

The death occurred on Tuesday, at Highclere, Durlough-road, Bridgewater, of Mr. William Alexander Collins, A.M.I.C.E., surveyor to the Bridgewater Rural District Council. Mr. Collins, who was forty-four years of age, was taken ill on the previous Wednesday. He was a native of Newbury. Mr. Collins was instrumental in establishing the Somerset Surveyors' Association, of which body he had been president and hon. secretary.

The Palace of Justice at Santa Barbara, Madrid, which was destroyed by fire on Tuesday, was constructed in 1758, at a cost of £840,000, by Ferdinand VI. and his consort, Barbara of Braganza, who intended it for a convent. It was a huge structure, built in imitation of the retreat of Madame de Maintenon at St. Cyr. The church, which contains valuable jewels and relics, and where King Ferdinand and his wife are buried, has been saved by the exertions of the fire brigade.

A fire occurred on Wednesday afternoon on the premises of Messrs. F. McNeill and Co., Ltd., 18 to 22, Lamb's-passage, Chiswell-street, E.C., the well-known makers of the "Lion Brand" roofing-felt and McNeill's slag-wool. It was discovered in the basement, and efforts to check its spreading were made by the staff of the firm with two private hydrants. On the arrival of the brigade three additional hydrants were employed, and the firemen soon subdued the fire. There will be no delay or interruption in the business operations of the firm.

Building Intelligence.

DUNFERMLINE.—For the last two years the Dunfermline Palace ruins, of which the Carnegie Trustees, by arrangement with H.M. Office of Works, have the custody, have been closed to the public, in order that measures might be taken for their preservation. The old walls have undergone thorough treatment, and are now adequately protected against decay. At the same time, opportunity has been taken to make excavations in order to lay bare the lowest portions of the structure. The result is of great importance in elucidating the ancient structure and subsequent changes in the building. Where the ruins abut on Monastery-street, south of the Pends, a piece of wall of no archaeological value has been removed, and a railing and gate will be substituted. Although the work is not completed, it is sufficiently far advanced to permit of the ruins being now opened to the public.

ROCHDALE.—The new pavilion at the infirmary in course of erection from plans by Mr. Hugh Healey, A.R.I.B.A., of Drake-street, Rochdale, and Chapel-walks, Manchester, which were selected in competition in January, 1912, is approaching completion. The extension contains 48 beds in large wards, and eight beds in special wards, together with ward kitchens, bathrooms, linen and patients' clothes stores. At the south end of the pavilion are two balconies for convalescent patients. A corridor connects the new pavilion with the Holden pavilion, and on the north side of this have been placed the casualty and electrical departments, together with a waiting-room and dressing-rooms. Adjoining the casualty department is a small ward for a noisy case. On the first floor over the casualty and electrical departments, have been placed the operating departments, comprising X-rays, anaesthetic and recovery-rooms, and north-lighted operating theatre with sterilising-room attached. There is also a doctor's room, with separate entrance. A new service-stair and electric-lift—placed between the King Edward and the Holden wings—will provide central communication between basement, ground, and first floors. The ophthalmic and out-patients' departments—on the basement and adjoining Whitehall-street—are being altered and extended by the provision of a waiting-hall to seat 150 persons, with consulting and dressing-rooms attached. Provision of more bedrooms for nurses, and of a new nurses' sitting-room has been made by extending the administrative block, adjoining the Infirmary Drive. A new kitchen department, with servants' quarters over, has been built in the north-west corner fronting Industry-road. There is also in progress a rearrangement of the medical officer's quarters and of the general offices, and a new committee-room is being provided. In the lower corner of the site adjoining Whitehall-street is a new mortuary, boiler-house, and laundry. The whole of the heating for the infirmary will be carried on and hot water supplied from the boiler-house, circulating mains being carried throughout the building. A covered way and subway connects the laundry with the servants' quarters. With these extensions the accommodation of the infirmary will now be about 84 beds. When funds allow, it is intended to extend the Holden wing and out-patients' department. The main contractors for the building are Dryland and Preston, Limited, of Littleborough; the original amount of their tender being £25,726.

WINCHESTER.—The trustees of the ancient Hospital of St. Cross, Winchester, have just carried out an interesting restoration. On the east side of the quadrangle is the ambulatory, above which is a long gallery or range of apartments, traditionally said to have been the infirmary, and called the Nunnes Chambers, from the three hospital nuns appointed by Cardinal Beaufort to attend the sick. This part of the building, the substance of which is earlier work, was rebuilt by Robert Shirborn, Master, in the

reign of Henry VII., but in all probability the buildings over the ambulatory were constructed by Henry Compton, Master, in the reign of Charles II., whose name appears beneath an oriel window. The front of this building was covered with roughcast, but under the direction of Sir Thomas G. Jackson, R.A., the whole of this has been removed, disclosing delightful timber-and-plaster work, such as Cheshire, Warwickshire, and Worcestershire are noted for. The timbers have been carefully restored.

PARLIAMENTARY NOTES.

IRVINE AND DISTRICT WATER SCHEME.—The inquiry under the Private Legislation Procedure (Scotland) Act into the Provisional Order promoted by the Irvine and District Water Board for powers to construct a new reservoir on the Drum Burn, in the parishes of Dalry and West Kilbride, was resumed in the Judiciary Buildings, Glasgow, on Friday and Saturday. The chairman was Mr. J. S. Ainsworth, M.P., and the other Commissioners were Lord Ashton of Hyde and Mr. Wilkie, M.P. Mr. William A. Tait, civil engineer, of Messrs. Leslie and Reid, the engineers of the scheme, gave evidence in support of the application, and eventually the order was approved and the clauses were adjusted.

WOOD-PAVING IN ABINGDON-STREET.—Mr. Booth inquired whether the contract for the wood pavement in front of the Houses of Parliament was placed with a condition that the work should be completed during the Easter recess; and whether competitive tenders were withdrawn because, in the opinion of the firms concerned, it was impossible to finish the work in the specified time. Mr. Beck replied that tenders were invited from five firms, of whom four sent in an offer. The lowest was accepted. There was no condition that the work should be completed during the Easter recess, and therefore the point raised in the latter part of the question did not arise.

Among the applicants to be admitted to the Freedom of the City of London whose claims came before the Court of Common Council yesterday (Thursday) was Mr. Oswald Archer, architect and surveyor, of Westwood, Essex-road, Leyton.

The squabble between the Liverpool Health Committee and the Parish Assessment Committee as to whether the city sewers should be assessed for rating purposes at £2,658 net or some other figure has been revived. Both parties have agreed to arbitration, but are now quarrelling about the qualifications of the arbitrator.

The South Staffordshire Waterworks Company's Bill and the Wolverhampton Corporation Water Bill, the preambles of which were both proved last week before a Select Committee of the House of Lords presided over by the Duke of Wellington, again came before the Committee on Monday and Tuesday for the adjustment of clauses, and were finally approved.

We regret to hear that, owing to failing health, Mr. W. Stubbs, A.M.I.C.E., borough engineer of Blackburn, has resigned, after holding office for nineteen years. The salary attached to the position is £700 a year. The general purposes committee of the corporation have placed on record their high appreciation of Mr. Stubbs's work, and he has been invited to supervise until its completion the Parsonage reservoir scheme which he has organised.

The Rochdale Corporation Health committee held a meeting on Friday night to consider the revised plans and estimates for the sanatorium for consumptives which it is proposed to erect on a portion of the Springfield estate at Marland, which was recently purchased by the town council for £12,500. The amended plans and estimates, which had been prepared by Mr. S. S. Platt, the borough surveyor, were unanimously approved. The cost of the sanatorium will be about £13,980.

The members of the North-Eastern and Eastern districts of the Institution of Municipal Engineers spent a pleasant time at Newark on Saturday, when various interesting buildings—ancient, restored, and modern—were inspected, explanatory statements being given by two of the local members, Mr. H. W. Lockton and Mr. P. A. Watford (surveyor to the Claypole Rural District Council). The members were received at the town-hall by the mayor, and at the close of the itinerary tea was served at the Saracen's Head Inn. Mr. W. Matthews Jones, of Chester, the president, occupying the chair.

LEGAL INTELLIGENCE.

WAYFORD TENANTS, LTD.—Mr. Alfred Wood, F.C.A., 14, Victoria-street, Westminster, London, S.W., the Receiver in this matter, has issued the following letter to loan stockholders, dated April 26, 1915: I am now in a position to report on the position of the Wayford Tenants, Ltd., which went into voluntary liquidation on October 30 last, in order to avoid a petition of one of the creditors for compulsory winding-up by the Court. In order to explain the matter fully, it might be well for me also to recapitulate some of the facts already known to you. (a) The assets consist practically solely of an estate of 98 acres at Wayford, Stalham, Norfolk, let out in small holdings to fourteen tenants, with five sets of farm-buildings and eight dwelling-houses thereon, two of the houses not being complete. There is, in addition, a gravel-pit, also machinery for making concrete blocks, of which the property on the estate has been built. The income consists of rents and from inconsiderable sales of gravel, to obtain which labour has to be employed. There were mortgage charges of £1,500 and £600 respectively, and a loan bond issue of £4,033 secured under a trust deed. The bonds rank in preference to unsecured creditors of £2,619, including loan stock of £1,269. The paid-up share capital was £1,119, and the uncalled share capital (tenants only) amounted to £1,633. The estate as per the last published balance-sheet of the society, dated December 31, 1913, with additions to date of liquidation, stood at £8,245. When I was appointed liquidator, it was necessary for me to prevent two actions being taken by secured creditors under the terms of their security—one by the first mortgagees, and the other by the trustees for the bondholders. After considerable negotiations, the trustees for the bondholders decided not to take action under their deed, and entered only formally into possession by appointing me Receiver for the bondholders. To avoid any action on the part of the first mortgagees, the trustees for the bondholders joined with me in an undertaking for the repayment to them of principal and interest. This gave me the opportunity to prepare a statement of accounts to the date of liquidation, to ascertain the financial position, and to arrange for a valuation of the property. It had already become obvious that a forced sale under the circumstances of the war would be disastrous, and the hardship would chiefly fall upon the tenants, who would be ruined by the calling up of share capital. The valuation was undertaken by Mr. Jonathan Howlett, a local valuer of repute, who joined with him Mr. Thomas W. Warren, F.A.I., of Messrs. Warren and Brown, of Yarmouth. When the valuation figures were embodied in the accounts referred to, a deficiency of £6,507 7s. 5d. was disclosed. The correctness of this valuation is proved when the existing rents (which could not adequately be increased) are compared with the capital value as per the valuation. The deficiency is chiefly accounted for by the fact that the society was a pioneer experiment in developing a co-operative small-holdings residential colony, the society building its own houses of concrete manufactured from gravel from its own gravel-pit. In my opinion, the main source of loss was the difficulty in raising capital, thus causing undue capitalisation of interest and the general expenses of developing the estate. The result, therefore, is that the paid-up share capital and loan stock is lost, and no sum is available to the unsecured creditors; for, according to the figures of the valuation, there is only sufficient value in the assets, after repayment of the mortgages, to meet less than a quarter of the loan bonds. I therefore negotiated with the bondholders to take over the estate on the lines of a proposal made to the meeting of tenants at which the resolution for voluntary liquidation was passed (a copy of which you have already received), and obtained their consent to proceed on these lines. In order to carry it through it was necessary to make arrangements for a new mortgage to replace the old first and second mortgages, to provide the necessary working capital, and to offer the composition to trade creditors referred to below. This mortgage was eventually obtained from the London, City, and Midland Bank, Sir Thomas B. Bowring, the leading bondholder, joining in the document in a personal covenant for the repayment of principal and interest. At a meeting of the bondholders held on March 23 last, the necessary legal formalities under the trust deed were gone through, and it was agreed that, instead of a forced sale taking place, or action taken for foreclosure, they should form a public utility company (interest being limited to 5 per cent. in shares) to take over the estate, and take up their claims of 4s. in the £1 in shares instead of a dividend in cash. It was also decided to agree to my offering to the trade

creditors, but not to loan stockholders, a composition of 2s. 6d. in the £1, and as this sum is a further sacrifice of bonds, the remedy of loan stockholders, if they do not approve, is to demand that I shall sell the estate or force a compulsory liquidation. In such an event the only result would be the ruin of the tenants by the calling up of the share capital to redeem the bondholders' losses so far as such called-up sums will permit. There would still be no return to the loan stockholders, nor could any dividend to the trade creditors then be paid. I am therefore to ask your formal consent to discharge your loan stock by signing and returning to me the attached. If I receive these consents, the trade creditors can be approached. If the latter accept the composition, I am then in a position to sell the estate to the company in process of formation at the valuation figures.

Wayford Tenants, Ltd., in Liquidation.

Statement of affairs, Oct. 30, 1914. (Date of resolution for voluntary winding up.)

Liabilities:	
First mortgage and interest	£1,303 17 7
Second mortgage and interest	610 0 0
Loan bonds and interest secured under trust deed	4,152 9 1
Loan stock and interest	1,269 13 10
Bank overdraft	395 2 0
Other unsecured liabilities	1,493 7 8
Shares	1,119 11 6
	£10,344 1 8
Assets:	
Estate as per valuation	£8,245 10 0
Sundry debtors	228 4 3
Deficiency	6,507 7 5
	£10,344 1 8

(Signed) Alfred Wood.
Receiver for the Bondholders and Liquidator.

ASSESSMENT OF PUMPING-STATION.—Metropolitan Water Board v. Chertsey Union. —At Friday's meeting of the Metropolitan Water Board, the Parliamentary and Law Committee reported that the Board's appeal against the decision of the Divisional Court on the special case stated by the Surrey Court of Quarter Sessions was heard on three days in March, before the Court of Appeal, comprising Lords Justices Buckley and Pickford and Mr. Justice Bankes, and that judgment was delivered upholding the decision of the Divisional Court and dismissing the Board's appeal, with costs. The main question raised in the appeal was as to the right of the Chertsey Union Assessment Committee to include in the valuation of the Walton pumping-station and intake an additional amount for special adaptability of the land for the purposes of an intake. This question was decided in favour of the Board by the Court of Quarter Sessions, who found that the facts in the present case were clearly distinguishable from those in the case of the New River Company v. Hertford Union (1902, 2 K.B.). The Divisional Court, however, were unanimously of opinion that as the Court of Quarter Sessions had not taken into account any added value in arriving at the figures of the assessment, they had failed to apply the correct principle as laid down in the Hertford case, and they allowed the appeal of the Assessment Committee, with costs. The Court of Appeal now upheld the decision of the Divisional Court. The present proceedings were instituted on the advice of Mr. Balfour Browne, K.C., with the object in view of testing the decision of the Court of Appeal in the Hertford case, and in view of the fact that Mr. Balfour Browne, from whom the committee had obtained a further opinion, still held the view that this case was wrongly decided, and that the decision ought to be reversed by the House of Lords, the committee had given instructions for an appeal to the House of Lords to be entered. The report was approved.

WATER SUPPLY AND SANITARY MATTERS.

SEWERS DAMAGED BY TRADE WASTES.—A discussion took place on Monday at a meeting of the Upper Stour Valley Main Sewerage Board regarding the alleged liability of Hales Owen Rural Council for damage to a sewer at Belle Vale, Hales Owen. The board alleged that the damage was caused by tipping over the land. The rural council denied liability. It was decided to appoint a sub-committee to confer with the Hales Owen Council upon the matter. It was reported that manufacturers' waste fluid was having a damaging effect upon the sewers in certain districts, and the engineer was directed to make inquiries.

Mr. John Alfred Johnson, architect, of Wigan, has died at the age of sixty-six. He carried out many important buildings in South Lancashire, and was a well-known Freemason, being Past-Master of Lodge Antiquity, Wigan.

Our Office Table.

Mr. Giles Gilbert Scott, F.R.I.B.A., the architect of Liverpool Cathedral, conducted a large party of Liverpool and Manchester architects over the edifice on Tuesday evening. In addition to members of the Liverpool society, there were also present about a dozen members of the Manchester Society of Architects. The Liverpool representatives included Mr. E. P. Hinde (president) and Messrs. Egerton L. Bower and E. H. Honeyburne (hon. secretaries), and the Manchester contingent was headed by Mr. F. B. Dunkerley (president). The inspection proved of special interest to the visitors. The choir and chapter-house (the latter erected by the Freemasons of Lancashire) are now almost structurally complete. A beginning has been made with the two transepts and the central space between the choir and the nave, the columns having already reached a height of 50ft. It is hoped to have the two transepts and the central space finished in two years, and if that be accomplished, that portion, together with the choir, will then be opened. At the close a cordial vote of thanks was passed to Mr. Scott, on the motion of Mr. Hinde, seconded by Mr. Dunkerley, both of whom congratulated him upon the magnificence of the designs and the manner in which they are being carried out. Mr. Scott, in replying, said in carrying out the original designs he was more and more aiming at securing the effects of repose and grandeur, and with that in view he was going in more and more for horizontals rather than verticals in the building scheme.

In the absence, on active service, of Dr. G. D. Bengough, M.A., honorary investigator to the corrosion committee, now a captain in the Royal Garrison Artillery, the council of the Institute of Metals have appointed Mr. W. E. Gibbs, M.Sc., as acting honorary investigator to the committee. Mr. Gibbs, prior to the outbreak of the war, was acting as Dr. Bengough's assistant in connection with the work for the corrosion committee. He is now engaged on a series of important investigations, the results of which will be embodied in the third report to the corrosion committee, which it is hoped will be presented at the forthcoming autumn meeting of the Institute of Metals.

Mr. William Oxtoby, a member of the Institute of Civil Engineers, and the engineer for the borough of Camberwell, was amongst the recipients of Grand Chapter honours on Wednesday, when he was given the rank of Assistant Grand Standard Bearer in the R.A. In the Grand Lodge of England the previous Wednesday he was made Assistant Grand Superintendent of Works. On both occasions his great popularity as a distinguished Freemason was proved by the respective hearty plaudits of his brethren in the craft and his companions in the R.A. Ex-Companion Oxtoby is the present M.E.Z. of the Eccleston Chapter No. 1,624. He was one of the founders of the T-square Lodge No. 3,269, and its first S.D., occupying the W.M.'s chair in 1911. He was also a founder of the Borough of Camberwell Lodge No. 3,303. As a Provincial Freemason he was invested Provincial Grand Sword Bearer of N. and E. Yorks in 1912.

The Board of Agriculture for Scotland, with the approval of the Secretary for Scotland and H.M. Treasury, have appointed Dr. A. W. Borthwick, Lecturer on Forestry at the University of Edinburgh, to be their Advisory Officer for Forestry. Dr. Borthwick, who succeeds the late Dr. John Nisbet, was educated at the College and University of St. Andrews. At the conclusion, in 1894, of his undergraduate career, he decided to devote himself to forestry, and went to Munich to study under the late Professor Hartig and his colleagues. There he remained three years, and passed through the course of training which is provided for those entering the German State Forest Service. On his return to Edinburgh he was appointed in 1899 Assistant to the Professor of Botany and Lecturer on Plant Physiology in the

University of Edinburgh, and held the latter post until his appointment in 1908 as Lecturer on Forest Botany. In 1905 the directors of the East of Scotland College of Agriculture appointed him a Lecturer on Forestry in the College. Since 1900 he has been Lecturer on Forestry and Forest Botany in the Royal Botanic Garden, and in 1905 he was appointed Interim Lecturer on Forestry in the University of Edinburgh. Dr. Borthwick has been awarded a gold medal by the Royal Scottish Arboricultural Society for a collection of normal and pathological specimens of trees, and also a gold medal by the Royal English Arboricultural Society for an essay on the life-history of the Scots pine. On the invitation of the Royal Scottish Arboricultural Society he acted as guide to a number of its members through the forests of Bavaria in 1909. Dr. Borthwick has a wide knowledge of his subject, and has made numerous contributions to the literature of scientific forestry. He is a past-president of the Botanical Society of Edinburgh.

In discussing the Bill now pending before the Michigan Legislature requiring the registration of architects practising in that State, a prominent Detroit architect is quoted as stating:—"It can be maintained without fear of successful contradiction that not one of the professions, trades, or callings now under State supervision touches the public welfare in more numerous and vital points, nor is there one upon which the safety of the life and property, health, and happiness of the public depends than upon the architectural profession. If, then, the State has deemed it wise to establish a certain standard of education and fitness in professions and occupations not so important as the practice of architecture, it should establish, by a registration law, a similar requirement for the practice of architects."

Writing in the *American Architect* on "How to get Good Results with Paint," Mr. G. W. Thompson summarises his conclusions by observing that the insuring of good painting work may be accomplished by: (1) Having all under coats harder than the following outer coats. (2) Allowing ample time between coats for the maturing of all surface inequalities and defects. (3) Having all paint as nearly as may be an integral part of the surface painted. (4) Good workmanship—and the having of all under coats well brushed in. (5) Using good and suitable materials, and avoiding false notions of economy, both in labour and materials. (6) Proper inspection of materials and workmanship.

"Surveying and Building Construction for Agricultural Students, Land Agents, and Farmers," by A. H. Hands and A. F. Hood Daniel (London: Longmans, Green, and Co., 10s. 6d. net), will doubtless be found of use to students studying to pass the examinations of the Surveyors' Institution, and similar bodies. It may also help land agents and farmers, who are not surveyors or builders, or mean to be, for whom, as the authors say in their preface, "the great value of the many books upon these separate subjects," but, so it is added, "for the most part too long and too advanced for any but those who intend to make one of these subjects their profession."

It is reported from Washington, D.C., that efforts will be made in the next Congress, by Texas senators, to have the force in the office of the Supervising Architect of the Treasury Department at Washington largely increased, so that work on public buildings for which appropriations have been made may be expedited. It is stated that the existing accumulation will afford constant employment for the present force for approximately five years, and it thus appears useless to look forward to securing the most necessary of structures until after 1920, unless steps are taken to relieve the situation in which the Supervising Architect is placed since the repeal of the Tarsney Act.

Advantages accruing from the use of hydrated lime in concrete are discussed in the recent annual report of H. L. Bowby, State Highway Engineer of Oregon. In that

State the practice is to add to each batch a quantity of hydrated lime amounting to from 5 to 10 per cent. of the weight of the cement. The value of the lime, the report says, lies to a small extent in the fineness of the particles serving as a filler, and in the main in its lubricating properties. It is noticeable that concrete containing hydrated lime slips and flows into place much easier, and forms a denser mix with less tamping, than that which does not contain lime. When lime is added, a less amount of water gives a greater plasticity, and therefore less danger of separation of the aggregates. Moreover, the lime tends to hold moisture in the concrete until the setting has passed that stage where loss of its water due to absorption from the ground below can affect it.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Geologists' Association. "Radio-Activity and the Measurement of Geological Times," by Arthur Holmes, B.Sc., University College, Gower-street, W.C. 8 p.m.

SATURDAY (To-morrow).—Association of Managers of Sewage Disposal Works. Visit to the Southend-on-Sea Sewage Disposal Works and Refuse Destructor. 1.50 p.m. Institution of Municipal and County Engineers. Meeting at the Town Hall, Scarborough. 10 a.m.

MONDAY.—Surveyors' Institution. Summary of the Session's Papers on "The Acquisition of Land, Tenure, Rating, and Housing," by William Allen, Barrister-at-Law. 8 p.m.

TUESDAY.—Society of Engineers. "Some Future Developments in Heating and Ventilation," by A. H. Barker. 7.30 p.m. Auctioneers' and Estate Agents' Institute. Presidential Address by John T. Woolley, 34, Russell-square, W.C. 7.45 p.m.

WEDNESDAY.—Royal Society of Arts. "Recent Progress in Pyrometry," by Charles R. Darling, F.I.C. 8 p.m.

THURSDAY.—Royal Society of Arts. "Indian Trade and the War," by Sir Charles H. Armstrong. 4.30 p.m. Society of Architects. Adjourned Discussion of "Proposed Model General Conditions of Contract." (Members Only.) 28, Bedford-square, W.C. 7.30 p.m. Town Planning Institute. Annual Meeting, 92, Victoria-street, S.W. 8 p.m.

FRIDAY (May 14).—Royal Institution. "The Archives of Westminster Abbey," by the Rev. Canon E. H. Pearce, M.A., Treasurer. 9 p.m.

A block of Sunday-school buildings added to the Baptist chapel in Walsworth-road, Hitchin, at a cost of £2,100, were formally opened last week.

At the meeting on Tuesday of the Coventry City Council the salary of the electrical engineer, Mr. Tough, was increased from £650 to £700 per annum.

The parish church of Holy Trinity, Broadstairs, which has been enlarged and partially reconstructed, will be rededicated by the Bishop of Dover on the 22nd inst.

At the meeting of the Warrington Town Council held on Tuesday night it was stated that the total cost of the construction of the new ferro-concrete bridge over the Mersey amounted to £19,962 19s. 10d.

Dame Margaret Lindsay Huggins, widow of Sir William Huggins, O.M., of More's Gardens, Chelsea, who died on March 24, bequeathed £1,000 for the erection of a memorial to her husband in St. Paul's Cathedral.

New offices for the Prudential Assurance Company are being built at Leicester from plans by Mr. Paul Waterhouse, F.R.I.B.A., of Staple Buildings, Holborn. The contractors are Messrs. W. Corah and Son, of Loughborough.

Rifleman Harold T. Gore (Queen Victoria Rifles) died at the base hospital, Boulogne, on the 26th ult., from wounds received at Ypres. He held the appointment of surveyor with the Royal Insurance Company, Lombard-street. He was one of the earliest to volunteer for the front, and had been out since November 4.

At Tuesday's meeting of the Atherstone District Council the surveyor submitted plans and estimates of a scheme for the erection of 61 working-class dwellings on land which has been acquired for the purpose on the Coleshill-road. It was decided to submit the whole scheme to the Local Government Board for their approval, and permission was given by the council, in the first instance, for the building of twelve houses.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

	Per standard.		
Yellow Pine Deals, 1st quality.....	£55 0 0 to £57 0 0		
" " 2nd " " " " " " " " " "	43 0 0 " 45 0 0		
White Deals: First " " " " " " " " " "	22 0 0 " 24 0 0		
" " Seconds " " " " " " " " " "	20 0 0 " 22 0 0		
U.S. Yellow Planks, Deals, and Battens " " " " " " " " " "	10 10 0 " 14 10 0		
Oak: Austrian Wainscot " " " " " " " " " "	£40 10 6 to £40 12 6		
Teak: Burmese, per load, 50ft. " " " " " " " " " "	28 0 0 " 34 0 0		
Teak: Java, per load, 50ft. " " " " " " " " " "	24 0 0 " 27 0 0		

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English " " " " " " " " " "	£9 5 0 to £9 7 6	
Wrought-Iron Girder Plates " " " " " " " " " "	9 10 0 " 10 0 0	
Steel Girder Plates " " " " " " " " " "	9 5 0 " 9 17 6	
Bar Iron, good Staffs. " " " " " " " " " "	6 5 0 " 8 10 0	
Do., Lowmoor, Flat, Round, or Square " " " " " " " " " "	22 0 0 " 0 0 0	
Do., Welsh " " " " " " " " " "	5 15 0 " 5 17 0	
Boiler Plates, Iron—		
South Staffs " " " " " " " " " "	8 0 0 " 8 15 0	
Best Sneydhill " " " " " " " " " "	9 0 0 " 9 10 0	
Angles 10s., Tees 20s. per ton extra.		
Builders' Hoop Iron, for bonding, &c., £8 15s. to £9.		
Ditto galvanised, £14 to £15 10s. per ton.		
Galvanised Corrugated Sheet Iron—		
No. 18 to 20. No. 22 to 24		
6ft. to 8ft. long, inclusive Per ton. Per ton.		
gauge " " " " " " " " " "	£13 0 0 " £13 10 0	
Best ditto " " " " " " " " " "	13 10 0 " 14 0 0	

	Per ton.	Per ton.
Cast-Iron Columns " " " " " " " " " "	£6 17 6 to £8 10 0	
Cast-Iron Stanchions " " " " " " " " " "	6 17 6 " 8 10 0	
Rolled-Iron Fencing Wire " " " " " " " " " "	8 5 0 " 8 10 0	
Rolled-Steel Fencing Wire " " " " " " " " " "	7 5 0 " 7 10 0	
Galvanised " " " " " " " " " "	8 15 0 " 9 5 0	
Cast-Iron Sash Weights " " " " " " " " " "	5 15 0 " 6 0 0	
Cut Floor Brads " " " " " " " " " "	10 15 0 " —	
Corrugated Iron, 24 gauge " " " " " " " " " "	16 0 0 " —	
Galvanised Wire Strand, 7 ply, 14 B.W.G. " " " " " " " " " "	14 5 0 " —	

B.B. Drawn Telegraph Wire, Galvanised—
0 to 8 " 10 " 11 " 12 " B.W.G.
£10 10s. £10 15s. £11 0s. £11 5s. £11 15s. per ton.

Cast-Iron Socket Pipes—
3in. diameter " " " " " " " " " " £6 15 0 to £7 2 6
4in. to 6in. " " " " " " " " " " 6 10 0 " 6 12 6
7in. to 24in. (all sizes) " " " " " " " " " " 6 17 6 " 7 2 6
[Coated with composition, 5s. 0d. per ton extra.
turned and bored joints 5s. per ton extra.]

Iron—
Cold Blast, Lillieshall " " " " " " " " " " 80s. 0d. to 127s. 6d.
Hot Blast, ditto " " " " " " " " " " 87s. 0d. " 97s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—
Gas-Tubes " " " " " " " " " " 72½ p.c.
Water-Tubes " " " " " " " " " " 66½ " "
Steam-Tubes " " " " " " " " " " 65 " "
Galvanised Gas-Tubes " " " " " " " " " " 60 " "
Galvanised Water-Tubes " " " " " " " " " " 56½ " "
Galvanised Steam-Tubes " " " " " " " " " " 50 " "

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town " " " " " " " " " "	£25 10 0 to —	
" " Country " " " " " " " " " "	26 10 0 " —	
Lead Barrel Pipe, Town " " " " " " " " " "	26 10 0 " —	
" " Country " " " " " " " " " "	27 10 0 " —	
Lead Pipe, Tinned inside, Town " " " " " " " " " "	27 10 0 " —	
" " Country " " " " " " " " " "	28 10 0 " —	
Lead Pipe, Tinned inside and outside " " " " " " " " " "	30 0 0 " —	
" " Town " " " " " " " " " "	31 0 0 " —	
" " Country " " " " " " " " " "	32 10 0 " —	
Composition Gas-Pipe, Town " " " " " " " " " "	28 10 0 " —	
" " Country " " " " " " " " " "	29 10 0 " —	
Lead Soil-pipe (up to 4in.) Town " " " " " " " " " "	28 10 0 " —	
" " Country " " " " " " " " " "	29 10 0 " —	
" " [Over 4in. £1 per ton extra.]		

Lead, Common Brands " " " " " " " " " "	17 17 6 " £18 12 6	
Lead Shot, in 28lb. bags " " " " " " " " " "	24 15 0 " —	
Copper Sheets, sheathing & rods 100 0 0 " 101 0 0		
Copper, British Cake and Ingot " " " " " " " " " "	89 0 0 " 90 0 0	
Tin, English Ingots " " " " " " " " " "	164 0 0 " 165 0 0	
Do., Bars " " " " " " " " " "	165 0 0 " 167 0 0	
Pig Lead, in lowt. Pigs (Town) " " " " " " " " " "	20 2 6 " 21 2 6	
Sheet Lead, Town " " " " " " " " " "	25 0 0 " —	
" " Country " " " " " " " " " "	26 0 0 " —	
Genuine White Lead " " " " " " " " " "	34 0 0 " —	
Refined Red Lead " " " " " " " " " "	32 0 0 " —	
Sheet Zinc " " " " " " " " " "	75 0 0 " —	
Old Lead, against account " " " " " " " " " "	19 10 0 " —	
Tin " " " " " " " " " "	9 0 0 " —	
Cut nails (per cwt. basis, ordinary brand) " " " " " " " " " "	0 14 0 " —	
* For 5 cwt. lots and upwards.		

SLATES.

	in.	in.	£ s. d.	per 1,000 of
Blue Portmadoc " " " " " " " " " "	20	10	12 12 6	1,300 at r. stn.
" " " " " " " " " "	16	8	6 12 6	" "
Blue Bangor " " " " " " " " " "	20	10	13 2 6	" "
" " " " " " " " " "	20	12	13 17 6	" "
First quality " " " " " " " " " "	20	10	13 0 0	" "
" " " " " " " " " "	20	12	13 15 0	" "
" " " " " " " " " "	16	8	7 5 0	" "
Eureka unfading green " " " " " " " " " "	20	10	15 17 6	" "
" " " " " " " " " "	20	12	18 7 6	" "
" " " " " " " " " "	18	10	13 5 0	" "
" " " " " " " " " "	16	8	10 5 0	" "
Permanent Green " " " " " " " " " "	20	10	11 12 6	" "
" " " " " " " " " "	18	10	9 12 6	" "
" " " " " " " " " "	16	8	6 12 6	" "

BRICKS.

(All prices net.)

First Hard Stocks...	£1 15 0	per 1,000	alongside, in
Second Hard Stocks	1 11 0	"	" (river.
Mild Stocks	1 9 0	"	"
Picked Stocks for			delivered
Facings	2 5 0	"	at rly. stn.
Flemons	1 14 0	"	"
Pressed Wire Cuts...	1 18 0	"	"
Red Wire Cuts...	1 14 0	"	"
Best Fareham Red	3 12 0	"	"
Best Red Pressed			"
Ruabon Facing	5 0 0	"	"
Best Blue Pressed			"
Staffordshire	3 15 0	"	"
Ditto Bullnose...	4 0 0	"	"
Best Stourbridge			"
Firebricks	4 0 0	"	"
2 1/2 in. Best Red Ac-			"
crington Plastic			"
Facing Bricks	4 10 6	"	(Net, delivered in
			full truck loads
			in London.
3 1/8" Acrrington Best Red Plastic Facing per 1,000			
Bricks	£2 10 0		
3 1/8" ditto Second Best Plastic ditto	2 2 6		
Ditto Ordinary Secondary Bricks	1 11 3		
Ditto Plastic Engineering Bricks	1 17 6		
Sewer Arch Brick not more than 3 1/8 in			
thickest part	2 0 0		
3 1/8" Chimney Bricks fit for outside work	2 6 0		
3 1/8" ditto ditto through and through	2 0 0		
3 1/8" Beaded, Ovolo and Bevel Jamb; Octa-			
gons; 2 1/2" and 1 1/2" radius Bullnoses; Stock			
patterns	3 7 6		
Acrrington Air Bricks, 9" x 2 course deep, each	0 0 6		
Ditto ditto 9" x 1 course	0 0 3		
Acrrington Camber Arches:—			
3 course deep, 4 1/2" soffit, per foot opening	0 1 3		
4 ditto 4 1/2" ditto ditto ditto	0 1 8		
5 ditto 4 1/2" ditto ditto ditto	0 2 1		
6 ditto 4 1/2" ditto ditto ditto	0 2 6		
3 ditto 9" ditto ditto ditto	0 2 1		
4 ditto 9" ditto ditto ditto	0 2 11		
5 ditto 9" ditto ditto ditto	0 3 6		
6 ditto 9" ditto ditto ditto	0 4 6		
Net free on rail, or free on boat at work's.			

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

White, Ivory, and	Best.	Best.	Best.	Best.	Best.
Salt Glazed.	Buff, Cream, Other	Second	Second	Second	Second
Best.	Seconds.	& Bronze.	Colours.	Colours.	Colours.
Stretchers—					
£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6	
Headers—					
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6	
Quoins, Bullnose, and 4 1/2 in. Flats—					
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6	
Double Stretchers—					
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6	
Double Headers—					
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6	
One side and two ends, square—					
18 17 6	17 17 6	21 17 6	26 7 6	18 17 6	
Two sides and one end, square—					
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6	
Splays and Squares—					
17 7 6	15 7 6	21 17 6	24 7 6	17 7 6	
Plinth and Hollow Bricks, Stretchers and Headers—					
5d. each	4d. each	6d. each	6d. each	5d. each	
Double Bullnose, Round Ends, Bullnose Stops—					
5d. each	4d. each	6d. each	6d. each	5d. each	
Rounded Internal Angles—					
4d. each	3d. each	5d. each	5d. each	4d. each	

MOULDED BRICKS.

Stretchers and Headers—					
8d. each	8d. each	8d. each	8d. each	8d. each	
Internal and External Angles—					
1/2 each	1/2 each	1/2 each	1/2 each	1/2 each	
Sill Bullnose, Stretchers, and Headers—					
5d. each	4d. each	6d. each	6d. each	5d. each	
Majolica or Soft Glazed Stretchers and					
Headers					
£22 17 6					
Quoins and Bullnose					
27 17 6					
Compass bricks, circular and arch bricks					
of single radius 4 1/2 in. per 1,000 over above					
list for their respective kinds and colours					
Camber arch bricks, any kind or colour,					
1s. 2d. each					
by 2 1/2 in.					
Stretchers cut for Closers and Nicked Double					
Headers, £1 per 1,000 extra.					

* These prices are carriage paid in full truck loads to London Stations.

Thames Sand	7 6	per yard, delivered
Pit Sand	7 0	"
Thames Ballast	6 0	"

Best Portland Cement	36	0 to 41	0 delivered
Ground Blue Lias Lime	21	6 per ton delivered	

Exclusive of charge for sacks.

Grey Stone Lime	13	6 to 14	0 delivered
Stourbridge Fireclay in sacks	27s.	0d.	per ton at railway station.

STONE.*

Red Mansfield, in blocks...	per foot cube	£0 2 4
Darley Dale, ditto	"	0 2 3
Red Corsehill, ditto	"	0 2 2
Cloaburn Red Freestone, ditto	"	0 2 0
Ancoaster, ditto	"	0 1 10
Greenshill, ditto	"	0 1 10
Beer, ditto	"	0 1 6
Chilmark, ditto (in truck at	"	
Nine Elms)	"	0 1 10 1/2
Hard York, ditto	"	0 2 0
Do. do. 6 in. sawn both sides,		
landings, random sizes	per foot sup.	0 2 8
Do. do. 3 in. slab sawn two		
sides, random sizes	"	0 1 3

* All F.O.B. London.

Bath Stone, delivered on road	£ s. d.	
waggons, Paddington Depot per foot cube	0 1 7 1/2	
Ditto, ditto, Nine Elms Depot	0 1 9 1/2	
Beer Stone, delivered on rail	"	
at Seaton Station	0 1 1	
Ditto, delivered at Nine Elms	"	
Station	0 1 7 1/2	
Portland Stone, in random blocks of 20ft. average:—		
Delivered on road waggons	Brown	White
at Paddington Depot,	Whit Bed. Base Bed.	
Nine Elms Depot, or	Per foot cube.	
Pimlico Wharf	£0 2 3	£0 2 4 1/2

TILES.

	s. d.	Divrd. at
Plain red roofing tiles	42 0	per 1000 ry. sn.
Hip and Valley tiles	3 7	per doz.
Brosely tiles	50 0	per 1000
Ornamental tiles	52 6	"
Hip and Valley tiles	4 0	per doz.
Ruabon red, brown, or brindled		
ditto (Edwards)	57 6	per 1000
Ornamental ditto	60 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 0	"
Selected "Perfecta" roofing		
tiles: Plain tiles (Peake's)	46 0	per 1000
Ornamental ditto	48 6	"
Hip tiles	3 10 1/2	per doz.
Valley tiles	3 4 1/2	"
"Rosemary" brand plain tiles	48 0	per 1000
Ornamental tiles	50 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 8	"
Staffordshire (Hanley) Reds or		
brindled tiles	42 6	per 1000
Hand-made sand-faced	45 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"
Hartshill "brand plain tiles,		
sand-faced	45 0	per 1000
Pressed	42 6	"
Ornamental ditto	47 6	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"

OILS.

Rapeseed, English pale, per tun	£28 15 0	to £29 5 0
Ditto, brown	26 15 0	" 27 5 0
Cottonseed, refined	29 0 0	" 30 0 0
Oliver, Spanish	39 10 0	" 40 0 0
Seal, pale	21 0 0	" 21 10 0
Cocconut, Cochin	46 0 0	" 46 10 0
Ditto, Ceylon	42 10 0	" 43 0 0
Ditto, Mauritius	42 10 0	" 43 0 0
Palm, Lagos	32 5 0	" 33 5 0
Ditto, Nut Kernel	35 0 0	" 35 10 0
Oleine	17 5 0	" 19 5 0
Sperm	30 0 0	" 31 0 0
Lubricating, U.S.	0 7 0	" 0 8 0
Petroleum, refined	0 0 6 1/2	" 0 0 6
Tar, Stockholm	1 6 0	" 1 10 0
Ditto, Archangel	0 19 6	" 1 0 0
Linseed Oil	0 2 1 1/2	"
Baltic Oil	0 3 3	"
Turpentine	0 3 2	"
Putty (Genuine Linseed		
Oil)	0 10 0	"
Pure Linseed Oil		
"Stority" Brand	0 9 0	"

GLASS (IN CRATES).

English Sheet Glass: 15oz.	21oz.	26oz.	32oz.
Fourths	5d.	5d.	6d.
Thirds	5d.	5d.	6d.
Fluted Sheet	5d.	6d.	7d.
Hartley's English Rolled	4in.	3 1/2 in.	4in.
Plate	3 1/2 in.	3d.	4d.
		White.	Tinted.
Figured Rolled and Repoussé	5d.		6d.

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Churn Oak	0 10 0
Superfine Hard-drying Oak, for seats of	
churches	0 14 6
Fine Elastic Carriage	0 12 9
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Fine French Oil	1 1 0
Eggshell Flattening Varnish	0 18 9
White Copal Enamel	1 4 9
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 6

Mr W. H. Bowen, county surveyor of West Sussex, has been elected by the surveyors of Kent, Surrey and Sussex, comprising 148 members as their representative on the council of the Institution of the Municipal and County Engineers.

The death occurred on Thursday last week, at his residence in Camrouse, of Mr James Wright for many years partner of the firm of Messrs. Duncun, Galloway, and Co., owners of the quarries at Carmyllie and Duntrotter.

Mr. J. C. Haller, the present acting surveyor, has been appointed county surveyor of Nottinghamshire at a salary of £500 per annum. The county council have agreed to a reorganisation of the county surveyor's and architect's departments and a separation of the duties.

TRADE NOTES.

Under the direction of Mr. Henry Browne, A.M.I.C.E.I., architect, Birr, the Boyle system of ventilation (natural), embracing Boyle's latest patent "Air pump" ventilators and air inlets, has been applied to the Masonic Lodge, Birr, Ireland.

The Metropolitan Water Board Bill has passed through the Committee of the House of Commons, and was reported, with amendments, on Thursday last week.

At the meeting of the London Education Committee on Wednesday it was reported that the Board of Education had directed that the scheme for the reduction of the size of classes should be proceeded with, as the Government had decided not to ask the County Council to postpone the work. Discussion on the letters which, if acted upon, will involve numerous alterations and enlargements to school buildings—was postponed until Wednesday next.

FOR**Olivers'****Seasoned****Hardwoods,**

APPLY TO—

WM. OLIVER & SONS, Ltd.,**120, Bunhill Row, London, E.C.****TENDERS.**

** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ABERDEEN.—For new steading, Mackie's Steps, and alterations on steading, Northside, for the town council. Accepted tenders:—

Steading, Mackie's Steps.

Masons:—

Moir, D., and Son ... 477 0 0

Carpenter:—

Hunter, J. ... 13 5 0

Slaters:—

Archibald and Leslie ... 31 9 6

Northside.

Masons:—

Moir, D., and Son ... 110 0 0

Carpenter:—

Coutts, J. ... 35 0 0

ABERDEEN.—For construction of new lavatories at Union-terrace, for the corporation:—

Scott, J., and Sons (accepted) ... £814 0 0

BAYSWATER.—For the conversion of the Bayswater fire sub-station into a full station for the London County Council:—

Higgs and Hill, Ltd., South

Lambeth-road, S.W. ... 66,900 0 0

Roberts, J. H. and R. Lower

Clapton-road, N.E. ... 6,377 0 0

Smith, W., and Son, Harleyford-

road, S.E. ... 6,171 0 0

King, W., and Son, Vauxhall

Bridge-road, S.W. ... 6,087 0 0

Monk, A., Edmonton ... 6,010 0 0

Coxhead, F. J., Leyton ... 5,907 0 0

Bowyer, J. and C. Ltd., Upper

Norwood ... 5,903 0 0

Wallis, G. E., and Sons, Ltd.,

Panton-street, S.W. ... 5,975 0 0

Triggs & Co., Clapham Common

Maddison, W. J., Canning Town

Holloway, H. L., Deptford ... 5,539 0 0

Godson, G., and Sons, Kilburn-

lane, W. ... 5,315 0 0

Godson, G., and Sons, Kilburn-

lane, W. (alternative) ... 5,221 2 11

(Architect's estimate comparable with the

tenders, £5,600.)

* Accepted. Alternative, excluding the painted work other than priming.

BRATHORP.—For the laying and jointing of pipes at the Hebben Saboratorium, near Grassington, for the health committee:—

Emery and Co., Aston, Bir-

mingham (accepted) ... £316 15 3

BRIGHTON.—For supply, delivery, and erection at the Southwick power station of a surface condenser, for the town council:—

Richardsons, Westgarth, and Co. ... £1,925 0 0

(Recommended for acceptance.)

CARDIFF.—For the completion of the roads on the first portion of the Rhubina Garden Village, near Cardiff, for the Welsh Town-Planning and Housing Trust, Ltd.:—

Mackay and Davies, Cardiff ... £1,135 6 11

Hayes, F., Liverpool ... 800 4 8

Davies, E. P., Dowlais ... 883 9 1

Lewis Bros., Dinas Powis, near

Cardiff ... 731 13 1

West, J. O., Treoda, Whit-

church, Glam. (accepted) ... 719 10 0

CARSHALTON.—For the construction of convenience in the park, for the urban district council:—

Baker, W., Wallington ... £253 0 0

(Recommended for acceptance.)

CHELMSFORD.—For making up Braemar-avenue, for the town council:—

Davey and Armitage, Southend ... £652 0 0

(Accepted.)

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Eppingham House,

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OUR ILLUSTRATIONS.

New Government Buildings, Cathays Park, Cardiff. The Principal Entrance. Mr. Richard J. Allison, A.R.I.B.A., Architect.
New Catholic Church, Northfleet, Kent. View and plan. Mr. Gilbert Scott, F.R.I.B.A., Architect.
Prudential Insurance Company's Office, Leicester. Mr. Paul Waterhouse, M.A., F.R.I.B.A., Architect.
The Underground District Railway New Station at the Temple, Victoria Embankment, W.C. View, plan, elevations, and sections. Mr. H. W. Ford, Architect.

THE SCAFFOLDING OF ORNAMENT.

Some are apt to think of the brilliant and original-minded designer as a being who rises superior to mere rule and rota. Really the most truly original are the most obedient to law. That which differentiates the artist, or picture-maker, from the designer, is orderly method. In decorative design, order alone is beauty; or, whence the grace of the plain dentil course? It is only necessary to put down a certain number of lines and points, geometrically related, to observe how simple are the elements of decoration, given law and order. Scorning this yoke, we fail; accepting it with due humility, we may from the most primitive objects evolve the ornamental. One wild rose, idealised and conventionalised, and a pair of dividers, may provide sufficient material and machinery to bring into being a scheme of decoration. Lacking the mathematical and orderly, a whole summer day's wealth of woodland and hedgerow will not assist us to achieve the decorative. Cram our brains as we may with forms of natural beauty, it is all vanity, unless by earnest study, and the help of the principles of balance and symmetry, we can convert the natural into the decorative; for Nature does not directly suggest it. We must search for beauty. And when we have evolved a decorative unit, we have yet to provide a scaffolding, or framework, whereby the object conventionalised is distributed over and subordinated to the object to be decorated. We may cover surfaces with every conceivable object of beauty, and, wanting a serious geometrical basis, attain nothing decorative whatever. A scaffolding, possibly unobtrusive, but existent all the same, seems as necessary in producing ornamental device as in building.

There are few more beautiful sights than dew-points, sunlit, on leaves and vegetation; but gorgeous though the effect may be, it no more suggests decoration than the starry host itself. On certain autumn mornings, the mists condense on spider-threads, and lines of glittering gems hang from twig to twig in true, mathematical curves. The effect is here highly decorative. If we seek to contrast the two conditions—the dew in wild and rugged asymmetry and the beads of condensed mist upon the spider-threads—we may find the genesis of the decorative in the geometrical basis, the catenary curve that connects, correlates, and brings under law and order the glistening water-drops. The spider wove the scaffolding; but its form was decreed by natural law.

If we too curiously seek to inquire into the real meaning and import of this

fundamental proposition respecting order and the ornamental and decorative, we may fail to find a satisfactory answer; but it may be at least worthy of observation that, in a scale of 10ft., each foot is part of the whole, logically so, and also to the eye; and that, in this way, perchance, when we divide and sub-divide and put ornamental device in set position, mathematically, each such part, division, and object is obviously related to the whole, and so the decorative objects become at one with, and are immediately correlated to, the object decorated. Be this as it may, it would appear a basic principle that the decorative object is subservient to the object decorated. If we do not succeed in this, we may paint pictures; but certainly we do not decorate.

To be a true decorator, it is insufficient to be sensitive to natural beauty. We may be entranced with the rose-in-June, and revel in the lovely mantle of blossom now over the countryside; but in no wise, therefore, may we be the more competent to design a rose-embroidered mat. We may wholly want the peculiar faculty of making an ornament of the rose or its thorny stem, and quite fail to appreciate the significance of the rigid geometrical base, or scaffolding, necessary to transfer the natural into the decorative. In this latter, no doubt, resides the chief efficiency of ornamental device, architectural or otherwise, and the main distinction between good and bad ornamentation. For motif is always with us, if we have eyes that see, and resolutely search for underlying causes; and at the worst we may crib someone else's conception of unit-form of ornament; but to arrange all under a new phase of some law, that shall make one of the decorating and decorated, is an art requiring much study and some aptitude. Hence we suggest the present need not only for investigating the causes of beauty, but of those laws that guide us in transforming the wild loveliness of nature into chaste and sober ornament.

Sound, natural motif and knowledge to combine and arrange in true decorative spirit, and the art of subliming, so to say, from the natural to the ornamental, seem the first essentials in decorative art. Above all, perhaps, sound motive and genuine prototype. We become, many of us, after some years, facile in producing, with pen and pencil, curved, floriated form, and too often deceive ourselves, misled by our own easy-going methods. To create novel and pleasing ornament, we must have recourse to natural prototype. This is the hard way; but the truly decorative method—the only one that can freshen our interest in architectural enrichments. There is more of graceful vegetation in creation than

mere acanthus. Genuine, natural prototype, and a spirit of law and order, without which we vainly essay to be decorative, are two primary requirements in architectural enrichment. If we remain content to fill in spandrels and the like with aimless right-and-left-hand curving, we may save ourselves trouble, but please no one, least of all ourselves.

We have, then, in ornamenting, to seek out first causes of the beautiful, not merely to draw a beautiful object. And we have to bring our wild rose or honeysuckle under a yoke; and that yoke or scaffolding, obvious or understood, and appearing perhaps as a mere reflex, must at times, like scaffolding, be finally cleared away. In the geometrical basis is the true birth of ornament, decoration, and enrichment. Mathematical severity does not destroy natural loveliness; it seeks to extract the essential spirit. All the grace of its natural prototype exists in the Grecian honeysuckle. For years the Chinese enshrined the vital characteristics of hawthorn blossom in blue-and-white porcelain.

Uncertain, indefinite character and absence of law in assembling the ornamental, seem the defects of the time, as evidenced in the average decorative design of our several arts and crafts. A genuine love for, and study of, naturally beautiful objects, and the art of extracting the elements of beauty for decorative purpose, is the remedy. It is always a relief to turn from our everlasting rococo scroll to the motive of the Japanese. For a few pence now we can purchase metal-ware imbued through and through with evident love of natural beauty, and genuine, natural, mastered prototype. It is a relief indeed from the standard curvilinear nondescript of our cheap silver-ware, and the vermiform appendages meandering over shoddy furniture and what-not?

The architect cannot too assiduously study and cultivate the spirit of true ornamentation, seeking novelty from intelligent observation and adroit conventionalising of natural beauty. No study is more refining; none more useful to those so often expected to advise in all arts and crafts down to final carpeting and upholstering. Where, for the reward of energy and enterprise, there exists a world of novel beauty awaiting idealising and conventionalising or reconventionalising in a new spirit, it seems folly to keep on dipping into one's own mind, bringing out, again and again, the same idea, founded on nothing, and meaning less. New study of forms suited to decoration and enrichment will give new life and vigour to our architecture. On these lines, decoration, ornament, and enrichment become of living interest, being neither on the one

hand the continued rehash of old worn-out themes, nor, on the other, the casting-up of the identical idea we have had, perhaps, "man and boy" for a score of years. If we allot one-half the grace and beauty of ornamental device to the device itself, one-half, certainly, must be allocated to the geometrical basis, or scaffolding. Hence, before ever deciding on the actual form, motive, or prototype for ornament, we might do well to give study to the geometrical framework necessary to the decorative. If we primarily locate mere dots or circles, such are sufficient, plus order, to give the true decorative spirit. It simplifies design, because we can always, later, substitute more graceful and interesting objects. If we commence ornamenting and decorating by concentrating attention upon the decorative object, we may miss true decoration, which, as we have seen, needs to be conceived with an underlying spirit of mathematics, symmetry, and order. We frequently do find failure by reason of too natural treatment. This seems the danger in decoration: to view the work merely with the eye of an artist. Safety resides in clinging tenaciously to square, dividers, and compass, as the practical exponents of law, order, and symmetry, until, at least, such time as our whole theme commences to emerge from primordial indefiniteness, and we can afford to relax a little the leading-strings of the severe and mathematical.

THE INTERNATIONAL SOCIETY OF SCULPTORS, PAINTERS, AND GRAVERS.

The eighteenth exhibition of the International Society of Sculptors, Painters, and Gravers, at the Grosvenor Gallery, is of fairly general interest, if few works of the first rank are to be seen.

Mr. William Strang's two exhibits are attractive — "The Captive" (29) and "Dreams" (34). The former is an excellent bit of flesh-painting. Mr. John Lavery's head and shoulders of a "Girl in Armour" (102) is also good. Mr. Walter Bayes has well emphasised Britain's fulfilment of her pledge, "The British Fleet will guarantee the security of the North-West Coasts of France: August, 1914" (35). Mr. Howard Somerville scores with "Zulu with a Black Eye" (41) and "The Little Dancer" (64). "A Sussex Stone Quarry," by Mr. Oliver Hall, is remarkably well rendered, and his "Les Angles" (51) hardly less so. We like Mr. Reginald G. Brundrit's "Rosamund" (46), and "La Maison du Roi" (49), by Mr. Alfred Withers, and "A Fortress" (50), by Mr. Sydney Lee. The latter has also two other works of more than average merit, "House with Turret" (203) and "Village Street" (270). Sir Charles Holroyd's "A Dead Christ" (67) is in every way a fitting portrayal. Mr. Nelson Dawson's "Fishing-boats coming into Scarborough Harbour in a North-Easterly Gale" (75) well presents the ordinary risks of our brave fisherfolk, intensified just now by German ruthlessness. "The Judgment of Paris" (83) is no mean attempt to embody the theme which has inspired so many artists. "The Smile of Pan" (84), by Mr. W. G. Lambert, is in curious contrast with the smirk on the face of the lady who, possibly, has provoked it. Miss Bridget Guinness has a good portrait of "Lady Mainwaring" (87), and Miss Flora Lion, one of "The Countess of Carrick and Children" (95); "The Mother" (99), by Mr. E. A. Walton, with her children playing round a peasant woman at the cottage-door, is one of the best of his always interesting exhibits. Another of a kindred sort is Miss Ann

Fearon Walker's "Mother and Son" (112). Of Mr. Theo Van Rysselberghe's eight contributions we prefer his "The Model's Rest" (124) and "L'heure du Bain" (142).

A spirited series of lithographs (204-215), by Mr. G. Spencer Pryse, all drawn on stone at the front, within the zone of the War, are much more real "War pictures" than some at the Academy. No. 209, illustrating a British Cavalry bivouac during the Battle of the Aisne, and the retreat of the Seventh Division and Third Cavalry on Ypres, are good. Mr. Alfred Delaunois sends two pleasing charcoal sketches of "Le Beguinage: Les Ames Solitaires" (190 and 193). Mr. S. J. Lamorna Birch has two of his favourite Cornish scenes, "May in Cornwall" (63) and "The Zone" (186).

Among others worth notice are Mr. A. D. Peppercorn's three landscapes (2, 3, and 100); Mr. D. Y. Cameron's "Dunstaffnage" (44); Mr. Charles Rickett's "The Descent from the Cross" (31); "Souvenir" (79), by Miss Ethel Wright; and a water-colour of the "City Merchants' Hall, Edinburgh" (170).

There is not much to say about the sculpture. Of his six subjects, Mr. Marnix D'Haveloose takes most space with a vigorous bronze statue of a "Danseuse" (54). Ten are contributed by Mr. Rik Wouters, of which "Vierge Folle" (117) is perhaps the best. Mr. George Minne has two creditable plaster pieces, "Debardeur" (151) and a "Portrait of a Man" (152); Mr. Victor Rousseau two, "Alice" (232) and a "Head of a Young Man" (253); and Mr. Harold Parker one of "Sappho" (330), also in plaster.

TWENTY-ONE GALLERY EXHIBITION OF DRAWINGS AND ETCHINGS.

The odd title of this Exhibition should deter no one from a visit to the charming little works now on view in the sequestered quietness of York-buildings, Adelphi. The assemblage is small and restfully remote from the stress of passing events, with which Mr. F. L. Grigg's pictorial conceptions and aims have little in common, discarding, as he does, all chic results or modernity of handling. Mr. Grigg, known to every reader by his architectural drawings and book or magazine illustrations, needs no introduction of ours; but his essays as an etcher will be new to many, while his appearance in the field of pictorial landscape is to be welcomed, and, according to the words of Mr. Wm. Ward, who adds a note about the Exhibition in the catalogue, using a phrase of Emerson, speaks of the etchings as "an original relation to the Universe." They show, at any rate, a personality of treatment, and in the smallest specimens there is breadth and bigness of scale. Besides this, we see in some an infinite care for detail, with almost a Meissonier-like finish. This quality is observable in the foreground of the "Priory Farm," of which a water-colour drawing of fine character is also shown. The ancient monastic hall, with its Gothic pointed door, reminiscent of old Cleeve, is seen to the left, with a massive timber-shed in the middle to the right. "The Cresset," "The Ford," and "The Pool" belong to a projected series of imaginary scenes. The first consists of an Edwardian bridge, with a gatehouse at its end, presumably leading to an ancient town. Planks and the foreshore, made to look busy in front of the scene, restrict the breadth of the waterway, which is free of craft or any intimation of contemporary life. "The Ford" is a canal-side, piled up with picturesque gables, after the model of Bruges or Amiens, with

buildings skirting the stone-built-up footway, which passes at places below the arched ways of the houses in rare quaintness. "The Pool," with its sturdy bridge, is of the same lineage, but beyond a big, rambling church of several periods is shown, rather suggesting by the draughtsmanship that it may have been depleted by the harsh hand of the restorer, who, however, left the tower, rising above the roofs, unharmed.

Minsden Episcopi carries us away into Somerset, with its ancient thatched gables and florid Tudor oriel. The lofty church tower at Ashwell overhangs the roadway, in silhouette, as seen from the north, while Maur's Farm is a combination of an old tower, corn-stacks, and a ruin, once probably famous. The dry-point called "Stepping-stones," with big trees to the front or middle picture at the edge of the stream and cliffs suggested in the distance, has fine quality, and Barnack Church, with its familiar tower and spire, sturdily stands against the dawn of a summer's day.

Among the drawings is a pen-and-ink gem called Chilton Church, squat and sprawling, but English in every part, drawn most feelingly. The most ambitious subject is a pencil study of the Rood Tower, Lincoln, being near another of the same kind, showing the towers of the church of SS. Mary and Cyriac, Swaffham Prior, Cambridgeshire. The little Norman church of Stanley Pontlarge is the subject of a very small etching, said to recall the poetic work of Samuel Palmer, done in a leisurely manner, such as distinguishes Mr. Grigg's other studies. The dry-point of "The Coppice" is full of colour and aerial effect in its pensive rusticity, done seemingly for the love of doing artistic work well. The stars on the frames indicate that the artist has received much practical appreciation.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The following is the list of members nominated for election to the Council of the R.I.B.A. for 1915-1916:—

President: Ernest Newton, A.R.A., President.

Vice-Presidents (four names only to be returned): Sir John J. Burnet, R.S.A.; Alfred Wm. Stephens Cross, M.A.Cantab., Vice-President; John Alfred Gotch, F.S.A., Vice-President; George Hubbard, F.S.A., Vice-President; Henry Vaughan Lanchester, Vice-President; Paul Waterhouse, M.A.

Honorary Secretary: Edward Guy Dawber. Hon. Secretary, Past Vice-President.

Members of Council (eighteen names only to be returned): Professor Stanley Davenport Adshead, Henry Victor Ashley, Walter Cave, Max Clarke, Arthur J. Davis, Henry Philip Burke Downing, Matt. Garbutt, Wm. Curtis Green, Henry Thomas Hare (Past Vice-President), Emanuel Vincent Harris, Gerald Calcott Horsley, Arthur Rutherford Jemmett, John James Joass, Arthur Keen, David Barclay Niven, Alexander Nisbet Paterson, M.A.Glas., A.R.S.A., Sydney Parks, F.S.A., Samuel Perkins Pick (Past Vice-President), Andrew Noble Prentice, Harry Redfern, Albert Edward Richardson, Edwin Alfred Rickards, William Gilbee Scott, Herbert Duncan Scarles Wood, Ernest Richard Eckett Sutton, Herbert Winkler Wills, Percy Scott Worthington, M.A.Oxon.

Associate Members of Council (six names only to be returned): John Anderson, Horace Cubitt, William Robert Davidge, A.M.Inst.C.E., George Leonard Elkington, Leonard Rome Guthrie, John Ernest Newberry, Herbert Shepherd, Leo Sylvester Sullivan, Philip Edward Webb, Herbert Arthur Welch.

Past Presidents (two names only to be returned): Reginald Blomfield, R.A., Thomas Edward Collett.

Representatives of Allied Societies: Graham Clifford Awdry (Bristol Society of

Architects). Robert Burns Dick (Northern Architectural Association). Frank Brookhouse Dunkerley (Manchester Society of Architects). Charles Kempson (Leicester and Leicestershire Society of Architects). Adam Francis Watson (Sheffield Society of Architects). John Watson (Glasgow Institute of Architects).

Representative of the Architectural Association: Herbert Austen Hall.

NOMINATIONS FOR THE STANDING COMMITTEES.

Art Committee. Fellows (ten names only to be returned): Arthur J. Davis, Edward Guy Dawber, Henry Philip Burke Downing, William Adam Forsyth, John Alfred Gotch, F.S.A., James Mitchell White Halley, Gerald Calcott Horsley, Arthur Keen, Henry Vaughan Lanchester, Harry Redfern, Halsey Ricardo, Giles Gilbert Scott, Harry Sirr, Henry Heathcote Statham, Raymond Unwin, Edward Prioleau Warren, F.S.A. Associates (six names only to be returned): Robert Atkinson, Hubert Springford East, Leonard Rome Guthrie, Walter John Nash Millard, Basil Oliver, Alfred Wyatt Papworth, Philip Edward Webb.

Literature Committee.—Fellows (ten names only to be returned): Arthur Thomas Bolton, F.S.A., David Theodore Fyfe, William Curtis Green, Andrew Noble Prentice, George Halford Fellowes Prynne, Edwin Alfred Rickards, Albert Edward Richardson, Charles Sydney Spooner, Arthur Stratton, F.S.A., Charles Harrison Townsend, Paul Waterhouse, M.A.Oxon, Herbert Hardy Wigglesworth. Associates (six names only to be returned): Thomas Simons Attlee, Martin Shaw Briggs, William James Davies, John Stevens Lee, Herbert Passmore, Stanley Churchill Ramsey, Charles Edward Sayer, Walter Lewis Spiers, William Henry Ward, M.A.Cantab.

Practice Committee.—Fellows (ten names only to be returned): William Henry Atkin-Berry, Max Clarke, Herbert Osborn Cresswell, Alfred William Stephens Cross, M.A.Cantab, Matt. Garbutt, Francis Thomas Wilberforce Goldsmith, Ernest John Gosling, Edward Greenop, George Hubbard, F.S.A., John Hudson, Frederick William Marks, Henry Percival Monckton, Alan Edward Munby, M.A.Cantab., David Barclay Niven, Sydney Perks, F.S.A., Herbert Duncan Searles-Wood, Alfred Saxon Snell, William Henry White. Associates (six names only to be returned): Horace William Cubitt, Percival Maurice Fraser, Edwin Gunn, Henry Albert Saul, John Douglas Scott, Herbert Shepherd, James William Stenhold.

Science Committee.—Fellows (ten names only to be returned): Harry Percy Adams, Robert Stephen Ayling, Horace Cheston, Allan Ovenden Collard, Alfred Conder, William Edward Vernon Crompton, Bernard Dicksee, Frederic Richard Farrow, Ernest Flint, Osborn Cluse Hills, Charles Stanley Peach, Professor Ravenscroft Elsey Smith. Associates (six names only to be returned): Robert John Angel, M.Inst.C.E., Henry William Burrows, F.G.S., William Robert Davidge, Assoc.M.Inst.C.E., George Leonard Elkington, Norman Odell Searle, Digby Lewis Solomon, B.Sc.Lond., Charles Edward Vardell, Ernest William Malpas Wonnacott.

LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council the Finance Committee stated that they hope to be able to report next session as to the action to be taken so as to comply with the spirit of the suggestions made by the Government in the matter of restriction of capital expenditure. The Council will have to consider the question in detail, as affecting—1. Expenditure incurred—(a) In carrying out existing contracts and in the discharge of liabilities already entered into; and (b) in the completion of works partly carried out—e.g., new County Hall, new lunatic asylums, street improvements, and new sessions house. 2. New expenditure on the following—(a) Works in fulfilment of statutory obligations—e.g., under Acts relating to mental deficiency,

main drainage, elementary education, public health. (b) Small works which would ordinarily be undertaken for the improvement of obligatory services—e.g., minor works at asylums, fire-brigade appliances, drainage improvements. (c) Works in completion of schemes approved before the war, but not yet subject of contracts—e.g., housing of the working classes, tramways, and works in connection with other optional services. 3. Expenditure of an optional character—(a) All purchases of property for street improvements, parks, or other services to which the Council is not already definitely committed, even although specially favourable opportunities present themselves for effecting such purchases. (b) All new enterprises or proposals. The course at first followed, soon after the outbreak of the war, was to press on with works in order to prevent distress from unemployment, and the Council gave contractors financial facilities by making more frequent payments than those stipulated by the contracts; but it is, the comptroller points out, obviously not good financial policy to press on with work when prices of labour and materials are both higher, and now that there is a shortage of labour in certain directions and unemployment is extremely low, there seems no reason for doing so, apart from the reasons which presumably are behind the policy now laid down by the Treasury. Moreover, as the Local Government Board point out, a time of distress and unemployment may arise when the war is over, and it will then be an advantage if local authorities are ready to put out schemes of work and press them forward.

The department most particularly concerned with the inception of new works is that of the architect. With regard to the possibility of carrying out works at this juncture, Mr. Riley informed the committee that there appears no difficulty in obtaining tenders at a price somewhat higher than that prior to the war; but there is difficulty in the actual execution of the work, owing to the shortage in transport, certain kinds of labour, and the supply of such building materials as stone, steel, timber, etc., which depend on transport and haulage.

The programme of work now in the inception stage in the architect's department covers fire-brigade stations, tramway buildings, schools and institutes, and working-class dwellings. Summarised, they fall into the following categories:—1. In the case of each of three works, the Education Committee have decided to accept a tender, and the Council have approved their action; but in none of these cases has the contract been signed by the successful tenderer or sealed by the Council. Total estimated cost, £20,794. 2. In three other cases tenders have been received but have not yet been reported to the Council. Total estimated cost, £26,880. 3. In 13 other cases the bills of quantities are either prepared or just upon the point of completion, and therefore ready for contract. These works amount to £209,985. In 12 other cases the working-drawings and specifications are nearly completed, but they have not yet been put in the hands of the quantity surveyors. These amount to £99,250. These constitute a total of 25 works, estimated at £309,235. 4. There still remain 102 works in the programme in various stages of preparation, and for which the drawings are now in hand, amounting in all to £977,228. There are, moreover, 137 works actually in contractors' hands involving an undischarged liability of £757,000, of which £544,000 ought to fall within the coming financial year. This is entirely apart from the liability on the New County Hall, which is £386,590 for 1915-16.

The maintenance of the Council's buildings and the repairs, etc., work incidental thereto, apart from certain painting already deleted from the programme, cannot, the architect assumes, be economically postponed, but the requisitioning officers are to put forward only such repairs as are urgently needed.

It was reported that the Committee of Lloyd have not only presented to the Council a marble statue of the Right Hon. William

Huskisson, but have now undertaken to provide a marble pedestal and to bear the cost of its removal to and re-erection on a site in Pimlico Gardens, Grosvenor-road. The assent of H.M. Office of Works having been obtained to the site the work of re-erection is now in progress.

It was reported that the building of the Furzedown Training College and hostels at Wandsworth, for which Messrs. F. and T. Thorne are the contractors, is almost completed, and that Messrs. W. Lawrence and Son have carried out the contract for erecting the trade school for girls at Hammer-smith.

The Highways Committee reported that five tenders had been received for the reconstruction for electrical haulage of the horse-tramways in Grange-road, Southwark Park-road, Raymouth-road, and Rotherhithe New-road. They proposed to accept the lowest tender for the work. They had communicated with H.M. Treasury, who had intimated that it does not appear to them that the reconstruction of these tramways is of sufficient urgency in the national interests to justify its being undertaken in existing circumstances. The committee had felt obliged by considerations of public safety to discontinue the present horse-car service, and no such cars have been run since May 1. Very considerable annual expenditure would be necessary to keep the roads in a proper state of repair in order to render them safe for ordinary vehicular traffic. They were now considering the desirability of the Council again bringing before the Treasury the great public need of electrifying these tramways with the least possible delay.

A letter has also been received from the Treasury to the effect that the proposed expenditure of £79,270 upon the reconstruction of the Burdett-road and Grove-road tramways should not be incurred in existing circumstances, and asking whether it is not possible to postpone, for six months or a year, the expenditure of £88,000 on turbo-generators for the tramways generating station.

The General Purposes Committee reported that the National Union of Gasworkers and General Labourers sought to have transferred to the Board of Trade for arbitration, under the Treasury memorandum, a claim for a 20 per cent. increase in wages made by the men employed at certain of the Council's sewage pumping stations. They recommended the Council to express the opinion that circumstances did not require that it should relinquish to any other tribunal the duty of fixing the wages to be paid out of the rates to Council employees. The men's application did not appear to be for a temporary grant to meet special circumstances occasioned by the war, but for a permanent increase of wages. Mr. R. C. Norman intimated that the Main Drainage Committee was at present considering the question of the men's wages. After a long discussion of several amendments, which were successively rejected, the recommendation was approved.

THE VALUE OF OBSERVATION IN WAR.

A specially convened meeting of members of the architectural and engineering professions was held in the East Gallery of the Royal Institute of British Architects' house, 9, Conduit-street, W., on Friday, to discuss the proposals in connection with the 4th Battalion "Architects" of the Central London Regiment Volunteers. Lieut.-Colonel A. W. Warden presided, and explained that he was glad to have the opportunity of addressing men whose expert and technical knowledge might be of the utmost value to the country if utilised for its defence. The Royal Engineers required skilled men, and could accept men who had been practically trained as "draughtsmen" and "surveyors." Again, experience with the theodolite would be of considerable advantage with the artillery, and the sanitary companies required men with experience in questions of sanitation. The 4th Battalion

City of London Volunteer Reserve was primarily for architects, and professional men who were over age or who had been rejected for some trivial defect would be trained for the emergency when every available man would be wanted for the front. The Chairman invited questions, and for nearly three-quarters of an hour these were poured in in quick succession, and were as promptly answered.

At the close, the Chairman introduced Mr. Frederick G. Cooke, M.S.A., A.M.I.C.E., of Eastbourne, who delivered the following lecture on

"THE VALUE OF OBSERVATION IN WAR."

Since gamekeepers and poachers make the best soldiers, you architects who are sportsmen ought to make absolutely ideal scouts and trained observers. Your knowledge of buildings and enclosures should avail much in street fighting and locating snipers. You are all too good to be massed in one battalion: you should leaven many regiments. No doubt many of you are thinking, "This man isn't a soldier. What does he know about the value of observation in war?" Well, I am an old Volunteer, and was trained as a civil engineer. I have sapped tunnels deep in the earth, burnt tons of powder, formed scores of miles of trenches, surveyed thousands of acres of land. I have been a devoted wildfowler for forty years. I have shot, fished, and sketched all over Europe, from the Tweed to Moscow. I have stalked big and little game in great forests and lonely marshes, at all times of the day and night. So I claim, by profession and hobbies, to be somewhat of a trained observer. Forgive the personal note: it is only to prove my credentials. I have never read a single book on scouting. What I am about to say is the outcome of my own experience and reading, and here and there a hint from the many officers who have read my lecture. But you must not expect too much. "There is nothing new under the sun." Goliath the Philistine boasted of his shining armour thousands of years ago. So did the German Emperor the other day; his armour is stained and dented just now, so was Goliath's when David had done with him. You may be astonished to hear that the greatest of all observers and scouts was David, the son of Jesse. I think now of that glorious statue in Florence by Michael Angelo. David the shepherd boy, it was, who came into the trench before the Israelite camp, and heard of Goliath's insolent challenge, and accepted it. One keen, observant glance sufficed to show that there was only one vital spot in the giant's huge frame (his forehead), only to be reached by a tiny missile, such as a pebble from the brook. David refused Saul's tempting offer of shining armour. Unencumbered, clad just as he came "from the sheepfold and from following the sheep," David rushed forward, and before Goliath could lower his helmet, used his sling, and the deed was done. The finest example of instant observation and initiative in military history. There is a moral in this, which I will even boldly point. Uniforms don't make trained soldiers, neither does shining armour confer invincibility. Now I will prove that David was a marvellous scout. Not once only, but twice, did he pierce at night through the serried ranks of the armed guard which surrounded King Saul (his deadly enemy) in his quarters. He reached the King's bedside, and, to prove that he could have slain him as he slept, he cut off a portion of the King's robe. Again he ventured, and this time took away Saul's spear to prove his second visit, and then how ruthlessly he poured scorn and contempt on Abner, the Captain of the King's Guard, in that he had failed to protect his Royal master. David was a mighty hunter, a fine sportsman, the keenest of scouts, a great soldier, a still greater King. It was because he was all these that he wrote and sang as no man ever did before or since. Now surely it is fitting that in this hall, of all others, David should be acclaimed as the man who (through Solomon his son) inspired the building of the Temple at Jerusalem, harbinger of the sacred Gothic

fan, perfect architecture, precious beyond rubies, which in France and Belgium now lie destroyed and desecrated by German hands. There is more true and noble culture in one bruised, broken sculptured fragment of Rheims Cathedral than in all the borrowed Gothic architecture in the whole of Germany and Austria. It is up to you, of all men, to search out, to slay, and to wreak condign vengeance on some at least of the authors of this unparalleled crime. In the name of all that is lovely and uplifting in humanity and art, strike without pity or mercy. It is to aid this end, however feebly, that I am here to-night. At 58 I may not fight directly, so with infinite labour I have prepared this lecture, animated by the encouragement and example of one I loved, who was 52 years of age; unable to enlist in England, he fought and died under the French flag for France and for the Empire, and he was of your profession and mine. You soldiers are soon to enjoy the very finest sport in the world—man-hunting. You are about to fight men armed, equipped, and disciplined like yourselves, both on equal terms so far, and they are just as ready to shoot you as you are them. It is not enough, therefore, for a soldier to be simply a good shot, he should be as wary as a hawk, and as watchful. His first great duty is to emulate the hawk—that is, to slay and not be slain. How can he best accomplish this? Surely only by becoming a trained scout and brilliant observer. Doubtless some of you are thinking, "This man isn't a soldier—what does he know about it?" Well, as a civil engineer, I am almost a soldier. Further, I have long been a student of military history. Of books on military scouting I know nothing. What I am about to say is almost entirely the result of my own experiences and reading, ranging over 40 years of my life. Let me begin by telling you how a trained observer once saved 300 men. During the Napoleonic Wars a French soldier, being badly wounded, was convalescing in a small town on the banks of a wide river, near Leipzig. He got to know of a shallow ford in the river and carefully noted its position. Many months after he had rejoined the French forces, his regiment fought a desperate rear-guard action in this very locality. The only available bridge was blown up, and so death or surrender stared the remnant of his regiment in the face; he remembered the ford, told his captain, led some 300 men to the place, and they all escaped. This will show you what one observant man can do. During the Soudan war a sporting British officer noticed that sand grouse came to drink every evening at a certain place, always at the same time, and from the same direction. One night they failed to come. He wondered why, thought it out, doubled his pickets, extended some especially in the direction the birds usually came from, and the result was that a rush of Dervishers was detected and foiled. Another instance of what one observant man can do. There is a little child's book entitled "Eyes and No Eyes"; it is a very pregnant phrase, and sums up the whole situation beautifully. The best soldier is the one sees everything around him and remembers what he sees, one who is not simply a shooting machine; he must have initiative—that is, be instantly ready for correct action in all circumstances by day or night. He must be always making mental notes of his surroundings far and near, and never forgetting them. Many of you are town-bred, unaccustomed to country life, yet because your powers of observation in other matters are acute, you may quickly become trained observers and clever scouts, if you will only apply those powers to your physical surroundings at home now, with patient and enduring energy. From my own observation in Germany, I believe the average German is no sportsman; he is a well drilled machine. That is why the British soldier beats him hollow. As a race we, on the other hand, are essentially fond of field sports, therefore more or less full of observation and initiative, and it is these two great powers which I seek to foster. It is easy enough; you have only to begin and stick to it like grim death. First of all, keep your eyes skinned; notice everything every-

where, largely so that you may know your surroundings by night. On the march, for instance, now in England get the lie of the land; notice all special features, houses, churches, towers, farm buildings, rivers, streams, ponds, hills, valleys, gates, detached trees, woods, stacks, telegraph poles, and all features which will enable you to know that road again, especially by night, for much fighting is done in the dark. Now begin in your leisure, by going into a field, a small one to begin with, look at it hard, and notice everything just for five minutes, and drill into your brain its main features, the nearest road, the gates, the fences, the gaps, the ditches, the crops, the humps in it; imagine there is a sharpshooter there—where is he hiding? or where could you hide? Note the depth of the ditches, and all special features, then turn your back on it and remember all you saw, and presently look again, and see what you have forgotten, and go over it all again. Always think you are in active service. Imagine that that field may contain a machine-gun, trenches, "dug-outs," even a hidden battery; it will quicken your interest. Now go into a much larger field, and do the same thing all over again; look at it well, as though you loved it, then walk it over and think if you could find your way about it at night without losing your way, just as a wildfowler does. Then begin to extend your range till you include quite a large district, and repeat the same process. Notice if the subsoil is chalk, clay, rock, or sand. Examine rabbit burrows and edges of ditches for this purpose. The grass will tell you, chalk grass is very short, clay grass is rank and coarse, and sand grass medium. Practice will soon make you expert. Small hills in clay districts are sometimes rock, sand, or chalk. It is of great importance to observe accurately, because of trench or "dug-out" digging. The difference between a wet or a dry site for trenches is naturally a very serious matter. Spend one night in a wet "dug-out" and then you will know. If there are ditches, streams, or rivers, note the depth of the water, as far as you can, the width of the water, and the nature of the bottom, if mud or otherwise. Smooth water indicates depth, running water shallows. This great war may be said to be a war of rivers—the Marne, the Aisne, and the Vistula, for instance. The nature and positions of all bridges should be remembered, also locks and lock-gates, and, of course, all fords. The flooding of part of Belgium (an act which defeated the German plan) could only have been done so skilfully by men who knew the country intimately—here again a wise initiative, probably on the part of one or two local men; it had an enormous effect on the campaign, for but for that the Germans might have been at Calais to-day. Wherever there is a ditch, stream, or river, note its narrowest points most easy for crossing. A fly-fisherman always does this instinctively; he will tell by the run of water when there is a bank near the surface, by means of which he can wade across. The weeds on and under the surface, or their absence, will give him a clue as to the depth of water and the nature of the bed of the river. To him a river or stream is like an open book, and so ought it to be to an architect. Note if the water is its normal colour; if running unduly muddy, this points to operations above, possibly bridge-building or damming. Always look for the highest flood level. Bushes on the bank will show this clearly; the information may be of great value. A sudden flood of unexpected height may break down temporary bridges or render trenches useless. The French suffered very heavy losses on one occasion on the Aisne, owing to the destruction of their temporary bridges by a great flood; possibly this was due to want of accurate information. A wildfowler, when in search of sport, never walks heedlessly along the top of a river bank or on very high ground, not even at dusk. He stalks carefully every length, keeping studiously out of sight, always selects a bend as a good place to see from; never does anything in a hurry, approaches the bank at right angles by a series of loop walks at intervals of one hundred yards, so, as far as possible, to dis-

turb only a short length of water; then very cautiously looks over the bank, first selecting a place where there is a bush, long grass, or reeds to screen his face, listens and ponders as to the meaning of every sound, and if he is a true wildfowler always has one eye on the horizon, and always looks where he can hide. If he wants to rest, he doesn't sit where he can be seen a mile off, on top of a gate, for instance. This diagram shows the bed of a river. Now, just to prove that I know something about rivers, I find that I have during the past thirty years had twenty years' fly-fishing (always wading), so averaging two miles a day; that represents wading at least 240 miles in twenty different

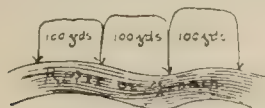


FIG. 1.

rivers, all over Europe, from the Itchen to the Arno. I must have forded rivers by day, and sometimes by night, hundreds of times. I once (I won't tell you why) crossed a river in Scotland and fished in it all night, a river I had never seen before. Trout, I may observe, sometimes rise very well at night. I have caught many big ones in the dark, fly-fishing. Now I will tell you the proper way to attempt to cross an apparently shallow river, a flooded trench, or any wide water. Look at this 5ft. landing-net handle, it has saved me many a perilous swim. You use it in discoloured water, or in the dark, as a blind man uses a stick. You feel your way, and so can look around all the time with confidence, rifle in hand—a tremendous advantage. A river-bed is always varying. Never trust a river. Never ford a strange one without a 5ft. stick. You may have to do it at night, what then? Cut one as you go along, and carefully sharpen the end. "Ridiculously obvious," you may say. Yes, but you may be obviously ridiculous when you urgently need what you haven't got, when perhaps the lives of your comrades are in your hands. Now, having safely crossed your river, you would be as mad as a hatter if you didn't mark on the bank exactly where you reached it, so that you can find that place again, even in the dark; a line of twigs or stones on the turf, pointing to the exact spot, is a good plan. (See arrows on diagram.) Further, you will carefully hide up that stick where you can find it. Remember that a river has moods. In the morning it may be clear, in the afternoon in flood, owing to rain possibly twenty miles away. A rise of even 6in. may make it impassable; you may stagger through 2ft. of roaring torrent, but 2ft. 6in. may be deadly, especially without a stick, as I know full well, if the bottom is rough. Further, the water will be muddy instead of clear, and you can't tell the depth. If you are upset with a rifle and 100 rounds on you, what chance have you of swimming? A dead soldier, or one without a rifle, isn't much good. If you step into a foot or two of mud, don't get flustered and plunge about; keep steady, and lift one foot after the other, very slowly, treading backwards; don't twist your feet, lift them exactly as you put them down. Put a key into a lock and turn it, then you can't then withdraw it; think of a key in a lock when you sink into thick mud. At a pinch fix your bayonet and use your rifle and bayonet as a stick; better a wet rifle than a dangerous ducking. I hope that I have said enough to prove that river-fording is a very awkward business sometimes. Many a soldier has flung away his life by blundering heedlessly into unknown water; it is equivalent to playing blind man's buff on the edge of a cliff. An expert wildfowler is of necessity a trained scout; his object is to see, without being seen, wildfowl flying or at rest. He would spot an aeroplane the moment it hove in sight, just as he spots wild duck on the horizon miles away. He takes no risks; he will wait prone on the ground ever so long, patiently, till he can see where the birds are

going to; he locates them with extreme care. He notes everything, just as a soldier "wildfowler" should when there are Germans about. A wildfowler seldom loses his way, even in a strange country. It is very serious when a soldier in active service gets lost. Let me illustrate this. In the Peninsular War Lord Wellington, on one occasion, manoeuvred Marshal Soult's Army into a very perilous position, in an hour or so it would have been destroyed; most unfortunately, at the critical moment, two drunken British soldiers, who had lost their way, were captured. They were hurriedly examined by Soult himself, who saw his



FIG. 2.

danger, and just slipped away in time. Drunkenness, and ignorance of their position, on the part of two British soldiers, deprived Wellington of a great victory. Next time you see a soldier recovering from drunkenness tell him that story; it may keep him sober for life. A soldier who is a hard drinker can never be a first-rate scout. Drunkenness is degrading enough in peace. It is a crime in war, a deadly sin against king and country. Practise going out to a fixed point (say, farm-buildings or a hill half a mile away) by following along hedgerows, fences, banks, or rough ground, so that no one can see you; imagine that a keen aeroplane scout is searching for you. Map out your course with thoughtful precision, watching and noting everything as you go along, both in front and behind. Remember that bullocks and cows will infallibly follow a crawling man, and even surround him, as I know only too well, when stalking wildfowl. This cuts both ways, so always watch the behaviour of cattle; even note which way they are looking, if they are quietly feeding or restless. It is the little things that count when you are scouting. Extra care in passing a gap or a hedge may mean a lot, so may failure or otherwise to take advantage of a slight roughness in the ground when passing over open spaces. Here extreme caution and preliminary study is necessary, go slow, and in going look for signs of men's tracks, especially in muddy places, along ditches, in gateways, and through gaps in hedges, across plank bridges near farm buildings; in short, everywhere, and, to reiterate, look back frequently; doing this prevents your being successfully followed. Further, it helps you very materially to know your way back, especially in the dark. Note all newly-made gaps and disturbances in hedges, rushes, thick vegetation, or crops; these may give you a clue to the existence of a sniper's haunt. Farm buildings, barns, sheds, cowhouses, hay, straw, and wood stacks, and the like should be watched very cautiously, even for a prolonged period sometimes, before being approached, and should be circuted where possible with a view to discovering fresh tracks leading to and fro, or a telephone wire leading to a German observation post. As far as possible avoid approaching within view of window or door openings, especially in lofts or suspicious holes in walls and roofs. Watch carefully the behaviour of all livestock or wild birds, the absence of the latter in the case of a large range of farm buildings points to the presence of human beings. Listen intently, when near such places, especially notice if the cattle or livestock are restlessly moving about; if strangers are there, they will cause farm stock to be uneasy, and you will hear them shuffling about. In short, when scouting buildings, stacks, etc., act as though you knew for certain there is a sniper there with a telescope sight and a pair of glasses ready to fire at you. Practise this at home by night as well as by day. No one can walk perfectly straight across a big field in

the daytime, much less in the dark; a man always wanders in a rough circle at night. The direction of the wind may help him to find his way; with a knowledge of the stars, a compass, if he has one, an observant man seldom gets lost. Every soldier should practise night walking in the open country at home. Only those who are constantly out for hours in the open country at night acquire "night eyes"; for the want of them I once fell over a slumbering bullock in the dark. I thought there was an earthquake. Possibly the bullock thought it had got nightmare. Never smoke in the dark; every time you light a match you lose your "night eyes"

for a minute or two, and you are signalling your position foolishly; further, in the dark you cannot taste tobacco smoke, and don't deserve to, either. There is much forest and woodland on the Continent in which fighting and scouting is inevitable. Never enter a wood of any size without first making a keen survey of its exterior outline; note if there is any high ground or a tall clump of trees in the wood, which you could recognise from the inside. You may want to get out in a hurry; think of this before you go in. Once you are in, go slow, very slow, and note, and perhaps mark, trees on the side you may want to return by; a gash with a knife will do. There are often streams, ditches, and dry gullies in woods, in which places the vegetation is generally thickest. In reconnoitring, as far as possible, follow these up very carefully; you will be less easily seen. If there are wide paths or rides in a wood, never go straight along them: that would be tempting Providence. Skirt these open spaces, be careful how you cross them even; slip across like a shadow, perhaps on your stomach. Wild birds and animals instinctively act with great caution on open spaces in woods; take example. If you are suspicious of some feature or screen, don't go straight up to it, as though you were going to put a letter in a pillar-box. Go round, take time, and look at that place sideways, from above or below; take nothing for granted. Never neglect a first impression that is a sort of instinct. In professional work I never neglect a first impression. In dealing with persons, the same applies. Note the behaviour of labourers in the fields; watch closely, you may detect a spy. Take notice of all footmarks of men and horses; observe which way they point. Obtain a German's boot as soon as you can on arrival at the front, and get the shape of the sole and heel in your head; then you can detect a German footprint. Don't display your own tracks heedlessly. Look out for empty German cartridge-cases: that may help you to spot a sniper's hiding-place, perhaps in the branches of a tree above. Leave no sign of your own presence, not even a cigarette end. Bury your empty cartridges. Practise squirming along the ground at full length like a crocodile; it's very dirty and unpleasant sometimes. (I have done a mile or two in my time, when stalking, but it is imperative in places.) Keep your rifle in front, always muzzle first, ready to shoot in an instant, and take care not to get snow or mud into the muzzle; that is sometimes fatal. If you fire, load again instantly; don't get up like an idiot (I have done it when shooting game; I am the idiot) with an empty rifle. Don't fix your bayonet when scouting; the steel will show far too plainly. Take every precaution to keep the breach of your rifle clean. Wrap it round with some dark cloth, if necessary; an old stocking does very well. If when scouting alone you hit a German, or think you have, and he stumbles or falls, keep a bead on him; he may be shamming. Take no risks; you wouldn't if you were tiger-shooting. Wild

beasts sham death; why not a German? He may have a revolver handy, though, of course, a scout's first duty is to observe, and therefore only to kill in self-defence, when there is no alternative, and even then with cold steel, if possible. Remember that very frequently the north side of a tree-trunk has rougher bark than the south; also it is usually greener. If it is dark, and you are uncertain which way to go, feel with your hands round a tree trunk; near the ground it will be greasier and rougher on the north side than on the south, and so you will know the North point. The prevailing wind is south-west; it bunches small trees and shrubs towards the north-east. This will give you a rough idea of the points of the compass. You can hear sounds more clearly if you put your ear near the ground. Be careful not to set long grass on fire by heedlessly throwing down matches. Don't smoke when you are on business bent connected with Germans. A list of soldiers was printed the other day stating why each had earned the new military distinction. In many cases it was for "Bravery and marked ability"; in some instances for "Skill in reconnoitring." Bravery is good, but cool, calculating skill in thought, observation, and scouting is equally necessary in a soldier who desires a medal and promotion. Think of the awful havoc which may result from one cunningly hidden and worked machine gun. What a glorious moment to the scout who spots a hostile one. It is done frequently; your chance will come. A few twigs or thistles, or tufts of herbage, will suffice to screen a recumbent man with a machine gun. Suspect all little humpy screens in woods, hedges, fields, potato-patches, ploughed fields, or anywhere. Very soon you will instinctively know whether such a screen is natural or artificial. Look closely for footmarks or trails in long grass leading towards suspicious points; make a careful circuit for this purpose. Remember that in searching for one thing you sometimes get information about another; laborious searching by a trained observer is sure to score sooner or later. In moving about, study to go quietly. A wild-fowler sometimes covers his boots with old sacking or cloth to deaden sound, which has the extreme quiet of a Red Indian's moccasin; poachers to the same, so do gamekeepers. That is why gamekeepers and poachers make splendid soldiers; they have already found that out in the trenches. If there are any gamekeepers or poachers present, please hold up your hands. Don't hesitate; you will probably be promoted to be scouts. Never move forward without a close study of your front and sides. Practise tree-climbing, also remaining stiff as a recumbent statue for an hour at a time. A scout often finds out more when hidden up than in roving. When roving, look behind occasionally; always act as though there was a German after you. Every regimental library should have all Fenimore Cooper's Indian story-books, and every soldier should read them; also "The Amateur Poacher," by Richard Jefferies. I, of course, have never read this, though I must admit to experiencing "a certain liveliness" with gamekeepers and river-keepers in Scotland, mainly owing to a very curious defect in my vision which prevents my seeing noticeboards. Don't blunder noisily along a wood like a driven bullock. I have seen a great bull elk amble along a Russian forest; he was in a hurry, too, yet he went away silently more like a shadow. He knew the value of silence, and certainly he had never lost his way since he was a calf. I won't point the moral. Sound travels with horrible ease in a wood. Go slowly and with extreme care, from tree to tree or from bush to bush; watch and listen for all you are worth. If the trees are big and thick with leaves, look up as well as in front and around. Few wild beasts ever look up, but a man should. Now here a knowledge of birds and animals may help. You will seldom find birds, rabbits, or hares in the inner depths of a big wood; the outskirts are sometimes full of them. You might find a hidden battery, though. Before entering a wood, notice if the birds

are leaving it hurriedly, or trying to settle and not doing so, which means that there are men about. If birds freely enter a wood or a hedge, and stay there, you may be sure there is no man near. Personally, I wouldn't dream of scouting with a service cap on, unless I had previously sat or stamped on it sideways. I would almost as soon have a full moon on my head. If there is a man, or a body of men, in a wood, all the birds and animals know it. They will be uneasy, and show it. Hide yourself cleverly (taking care to cover your legs so that neither man, beast, nor birds can see them); it is the legs of a man which reveal his presence most. Then note the behaviour of the birds and animals by eye and ear. A rabbit may come along obviously uneasy; he will stop and listen with ears upright, and then dart off away from danger. A pheasant may come along also uneasy; he has spotted a man, or a body of men, somewhere, just as surely as he will presently spot you. They know, and they will indicate to another near you (if there is one) that you are there, which may, or may not be, awkward. Small birds behave in the same way; they are not so plentiful in France as in England, but still they are there. My brother, alas! now in a soldier's grave, when in the trenches in France on Christmas morning near Peronne, had breakfast with a robin, some chaffinches, and bullfinches. He loved birds; they found him out even in the firing line. He often heard plover and partridges calling at night. There are, of course, birds in the open fields as well as in hedgerows and woods; sea-gulls, herons, rooks, magpies, jackdaws, hawks, wood-pigeons, partridges, starling, plover, and all sorts of birds, as in England. Watch these, and they will tell you something useful. When you are lying up on duty, note the behaviour of the birds flying past. Rooks, crows, jackdaws, and wood-pigeons take long flights. They know their districts perfectly; so ought you. Hindenberg scored heavily because he knew every inch of the Masurian Lake country. If you see them flying low and easily, you can be sure there is no disturbing element about; but if you see a crow, for instance, suddenly swerve and dart upwards, you may be sure that he has seen a man, or a body of men, possibly inside a wood, behind hedges, in a trench, or in a farmyard, or hiding in roofs. Don't think for a moment that you can hide your body in a hedge, ditch, or gully, or behind a bush, so that birds won't see you; you can't do it. Watch all long-flight birds keenly; you will learn something. Let the habit grow on you; you ought to know by instinct the difference in the flight of a tame pigeon and a wild one. I can tell for certain hundreds of yards away, and the knowledge might be useful one day. A carrier pigeon carries messages, you know. It is extremely important to listen to the flight and cries of birds at night. If you hear the swish of wings in the dark, say from a covey of partridges or wood-pigeons crashing out of a thicket, then you know there is a disturbing element about. If you hear partridges calling at night in a field, you may be pretty sure there is no one there; that may be useful. Small birds—thrushes, blackbirds, larks, and birds generally, make a noise when disturbed at night; so do hens, tame ducks, and geese; you may hear them some distance off. Why are they disturbed? Find out. All this may sound like "Tommy rot" to some of you; but wait till you are in the trenches, or on a scouting expedition, and in a lull in the dead of the night you hear strange sounds: it's your business to know what causes the noise and to gather what's afoot. You won't know if you don't learn now, that's certain. A trained observer is seldom mystified, so work hard and become one now. In conclusion, I want to paint a picture. Imagine yourself at the front on sentry duty in the trenches one morning at dawn. You, being a trained observer, had got in your brain the previous night every detail of the ground in front and around. Well, the moment the light came, you, of course, looked all about you, and in a moment you spotted something in the near

distance that wasn't there the previous day. You at once reported what you saw, an officer hurried up with his field-glasses, and after careful examination he declared, "Private Brown, that's splendid; you have done it, by Jove; it's a German battery." Soon that place you, on your own initiative, pointed out, was shelled to pieces, and that same day you were Corporal Brown, only because you proved yourself a trained observer by careful practice at home. Far too many British officers have been killed by German snipers. If you have, as you must have, affection for your own officers, who have done, and are doing, so much for you, then now is the time to become trained observers and brilliant scouts, so that when you get to the front, you may bear the hostile marksmen down, and take a long, long toll of German officers and avenge ours who have fallen. I had this in my mind all through in writing my lecture.

The lecture, which was heard with tense and silent attention throughout, received at the close long and hearty cheers. The Chairman expressed the indebtedness all felt to Mr. Cooke for giving so practical and helpful, so instructive and amusing an address. He was sure any architect or engineer who had carefully listened to it would make a better, more intelligent, and more efficient soldier.

The salary of Mr. A. J. Marshall, borough surveyor of Merthyr Tydfil, has been increased by £50 per annum.

Mr. F. C. Hartigan has been appointed by the Limerick County Council deputy surveyor for the county for a period of six months.

The Middlesbrough Corporation have received the sanction of the Local Government Board to a loan of £4,600 for the improvement of Auckland-road.

Mr. Richard Evans Willoughby Berrington, of Lifford, Penn.-road, Wolverhampton, civil engineer, a well-known authority on water supplies, and a former mayor of the borough, who died on January 24, left £20,796.

The county council of West Sussex have decided that the Norfolk Suspension Bridge, which carries the main road from Brighton to Worthing over the River Adur at Shoreham, shall be rebuilt at an estimated cost of £17,000.

The Irish Glass Bottle Makers' Society are about to build themselves a clubhouse in Irishtown-road, Ringsend, Dublin, from plans by Mr. A. V. O'Rourke, of College Green. The assembly-hall will be 60ft. by 25ft. The builder is Mr. John Dillon, Drumcondra Park, Dublin.

An artificial stone patented by Elwood Gossett, Los Angeles, Cal., consists of the following ingredients in substantially the proportions given: Rock-salt 16lb., iron-rust 6lb., volcanic ash 10lb., silica sand 20lb., ground asbestos 4lb., powdered rock 10lb., green vitriol 1lb.

Scarborough Corporation have instructed their borough engineer, Mr. H. W. Smith, to proceed with the erection of the buildings in connection with the South Cliff improvements to such an extent only as may be necessary to protect the work already done, and to save loss or additional expenditure when the work of completion is resumed.

At a meeting of Foleshill Rural District Council, the surveyor, reporting on the Foleshill housing scheme, said the first batch of houses would be ready for habitation at the beginning of July; but he thought the completion of the scheme would be delayed, as it was difficult to get material, owing to the war. The Bedworth scheme was progressing satisfactorily.

Mr. P. M. Crosthwaite has held a Local Government Board inquiry at Newport, Mon., as to an application from the corporation for sanction to borrow £14,820 for drainage-works in the Corporation-road district, and £765 for the purpose of raising the eastern bank of the River Usk from 30ft. to 32ft. fronting certain works. The deputy town clerk, Mr. Treharne Morgan, stated that the new drain had become necessary because the Mannesmann Tube Co. had taken an area of land upon which to build works where something like three thousand men would be employed. The offices had been constructed, and though the works were not now being built, the corporation had been informed by the engineer to the company that some portion of the works would be completed this year.

Corrente Calamo.

We congratulate those who had the opportunity on Friday night of listening to the timely and pertinent lecture at the R.I.B.A. by Mr. Frederick G. Cooke, M.S.A., A.M.I.C.E., on "The Value of Observation in War," which we give elsewhere. We are sure it will be read with interest by the many architects who have responded to the country's call, and who, as Mr. Cooke told them, are too good to be massed in one battalion, and should leaven many regiments. Undoubtedly the architect's special knowledge—especially if he is a sportsman as well, will avail much in this war, and the more so if the lecturer's cautionary hints are well digested. That it may be their good fortune to avenge those who have fallen beneath the treacherous and murderous methods of warfare on land and sea in favour with Germany, and the barbarous destruction and desecration of the precious masterpieces of architecture in France and Belgium, only less dear to English architects than to their French and Belgian brethren, all will eagerly hope, and it is up to every one of us who, like Mr. Cooke, are too old to fight, to assist those who are giving their lives for the freedom of Europe and the triumph of righteousness, to aid to the last penny of their means, and by any hints they can give from their own experience.

Our local authorities certainly seem to be favoured with very zealous legal advisers. When it comes to a decision in court, their advice is frequently found to be wrong. But as the costs of fighting, and losing, a point of law that never had anything in it, are borne by the rates, and are covered up in accounts that nobody sees, or would understand if they did, all goes well, and a brisk legal business is maintained. We noted a case in our issue of April 23 (*Horriadge v. Makinson*), in which a local authority tried to throw the claim for compensation to a passenger, for an accident that occurred through the defective state of the pavement, upon the frontager before whose house it occurred. The High Court held that, as the road had been taken over, and was repairable by the local authority, he was in no way liable. But it now seems, from a further report of this decision, that the local authority also tried to make a binding precedent in that case for general and future use (doubtless under legal advice), and wholly failed. The Private Street Works Act, 1892, allows of alterations in the levels of the road. When about to do such work the authority draws up plans, and solemnly gives notice of these to the frontagers, with an invitation to inspect them, as is also done in regard to the making and paving of new streets. It was now actually argued that the frontager in this case was legally bound to inspect their previous plans, and, not having done so, he must be taken to have accepted them, and so was himself responsible. But the High Court firmly held that the law imposed no duty whatever upon frontagers to make such an inspection, and so this pretty point fell to pieces. Still, it shows the lengths to which our authorities will go in the way of useless litigation, out of the ratepayers' money.

A feature of interest in the annual exhibition of the Royal Scottish Academy, opened at Edinburgh on Saturday, is a display of

seventeen works in sculpture by M. Auguste Rodin, presented in November last to the British nation, and ultimately to find a home at the Victoria and Albert Museum. They include his "Prodigal Son," an attenuated youth with head and hands upraised; "The Fallen Angel," two winged female figures, the one prostrate, the other raising her sinking head and about to kiss her. There are also a replica of the much-discussed "Age of Bronze," the seated figure of "Cybele," "The Muse of Meditation," and seven portrait busts in bronze. The total number of works shown at the Royal Scottish Exhibition is 724, as compared with 682 in 1914. Of these 334 are oil-paintings, 145 water-colours, 62 pieces of sculpture, 66 architectural drawings, and 117 works in black and white. There are increases of five oil-paintings, four architectural drawings, 28 works in black and white, and 29 water-colours, and a decrease of 24 works of sculpture in the galleries.

We have so often echoed the cry of the homeless, that there remains little to say, except that we are aghast sometimes at the ignorance or indifference of the mass of the people of all classes to the grim outlook before us as a nation if something is not done soon to grapple with the evil which more dangerously threatens us than any other—even the worst possible contingencies of the present war. In town and country to-day the wholesome traditional English love of the home is disappearing, simply because for hundreds of thousands comfort therein is unobtainable. The habit of spending as little leisure therein is growing, as witness the huge crowds which throng nightly to the picture-palaces and public-houses, mainly because overcrowding has made rest and home recreation impossible. The ominous growth in the shortage of houses since 1906 is the ugliest symptom of social demoralisation of the time. The *Land Union Journal* summarises some of the facts we have so often adduced, and we earnestly wish they could have wider circulation, and that politicians and preachers and journalists who have the ear of the multitude would recognise the urgent necessity of driving them home in season and out of season. For fifty years we have been tinkering legislatively and philanthropically with the matter, and still things grow worse—never so fast and fatally as during the past ten years.

There is not a word of exaggeration in the *Land Union Journal's* statement that very nearly one-tenth of the population are still living in a state of overcrowding which permits but a single room for more than two persons, in which they have to live, feed, sleep, and possibly to die. In many towns, one-third of the population are living in this unhealthy and degrading condition. It is scarcely surprising that in some districts one-fourth of the children born fail to reach their first birthday. From 1900 to 1906, an average of one house of under £20 annual value was built each year for every 280 persons. From 1906 to 1912 the number built fell by one-third, an average of only one house being built for every 422 persons. From 1912 to the date of the outbreak of the War, there was no improvement upon this figure. Having regard to the normal increase of population and the adequate replacement of decayed and dilapidated houses, it is necessary for at least 125,000 houses of this class to be built each year.

The average number built between 1900 and 1906 was 118,615. Between 1906 and 1912 the average fell to 83,833. In 1912-13 only 56,000 were built. Before the War there was a house-famine in many parts of the country. Since the war broke out still fewer houses have been built. The returns received by the Board of Trade from urban districts whose aggregate population exceeds 12 millions, show that for the three months July to September, 1914, the estimated cost of dwelling-houses for which plans were passed decreased by 12 per cent., October to December by 31.9 per cent., and January to March by 63.9 per cent. The total decrease in expenditure in the selected areas amounted in the nine months to no less than a million and a-half. This is probably typical of what is going on all over the country.

It is perfectly true that there is at present little unemployment among the rank and file of the building trade workers. Among 895,000 workpeople insured against unemployment under the National Insurance Act, the percentage of unemployment at the end of March was only 2.2 per cent., a decrease of 2.4 per cent. on the rate of a year ago; that is to say, those normally engaged in building and construction have either enlisted or have been absorbed in Government or other special work. Over 12 per cent. are known to have joined the forces, and all the while, as paragraph after paragraph week by week in our columns proves, the shortage of houses grows. We hoped that the Town-planning Act of 1909 would have done something to mend matters. So far, it has been more hostile than helpful. We have shown how the Birmingham schemes—deemed "models" by the Local Government Board, have stopped building and sent up rents. It has been said, by a leading surveyor of considerable experience, that from the day on which a local authority makes an application to the Local Government Board to prepare a town-planning scheme for any area of land, the development of such area is sterilised for an indefinite number of years. In North London, development has been absolutely stopped by the Act.

Everybody really conversant with the matter knows that in the past private enterprise alone has in any degree met the demand for houses. In the Local Government Board Memorandum of 1913, it was calculated that, out of the 5,528,108 dwelling-houses in England and Wales shown in the report of the Commissioners of Inland Revenue for 1912 as exempt from inhabited-house duty for the year 1910-1911, not more than 15,000 had been erected by local authorities under Part III. of the Housing of the Working Classes Act, 1890. Mr. Burns expressed his opinion that private enterprise has always been, and, so far as could be foreseen, would continue to be, the main source of the provision of houses for the working classes. The Urban Report of the Land Enquiry Committee gives 99 per cent. as the proportion of working-class houses supplied by private enterprise. To-day the private investor and the speculative builder look askance at house property. The *Land Union Journal* says the problem is "How are we to persuade the wage-earner to pay such a rent as will induce the small capitalist to buy house-property as an investment?" We are not sure that the problem is thus fully stated; but we entirely agree that a sufficiency of houses cannot be

built until houses again become a desirable investment for the individual. The whole course of legislation during the past ten years has been hostile to the private investor, and till he and the builder are relieved of the burdens laid upon them there will be no sufficiency of houses. Could we but manage to interest Mr. John Redmond in their behalf! He seems the only man able to bring Mr. Lloyd George to his knees!

According to a recent report presented by Francis M. Barton, secretary of the Board of Examiners of Architects of Illinois, the working of the architects' licensing law in that State has involved the readjustment of certain ideas as to the relation of other professions allied to the practice of architecture. The report sets forth that the legality of the board's interpretation of the Act constituting the department has been fully sustained by the Supreme Court. Continuing, the report states: "This board has found its greatest work to be the elimination from the architectural field of various architectural firms, which operate under an alias, such as architectural engineers, civil engineers, industrial engineers, designers, builders, etc. Most of these violations are assisted by a licensed architect, who is either financially interested, a partner, or who secures a salary. This board has eliminated at least twenty such illegal combinations in the last few months, and expects to eliminate all others from the architectural field in the near future. These combinations are to a great extent the result of lack of enforcement of the law or improper interpretations of the meaning of the wording of the Act. Attention is called to the fact that all structural engineering on building is part of the architect's work and cannot be performed by others, except under the direction of a licensed architect; and that the architect is responsible for all engineering data shown on his sealed plans, whether performed by him or not."

We are glad to see that the special committee recently appointed by the Manchester City Council, at the instance of Councillor H. Ross Clyne, to "inquire exhaustively into the present methods adopted in connection with civic architectural matters, with a view to their possible improvement in efficiency and economy," met on Wednesday in the Town Hall, Alderman Box (chairman) presiding. The further purpose of the committee is to advise the Council with regard to the advantage of inviting firms of architects in private practice to design buildings, thereby enabling the city architect to devote himself more particularly to advisory and supervisory work in connection with the plans that come before the corporation. The committee decided to invite the Manchester Society of Architects to send a deputation on June 16 and lay the society's views on the subject before the committee. All the departments of the corporation which have to do with building operations are to be asked to lay their views on the subject before the committee.

The Local Government Board have sanctioned the borrowing of £24,000 by the corporation of Dublin for the erection of working class houses on the Ormond Market area.

A new technical school in York-road, Clitheroe, at a cost of £20,000, was opened last week. The building was designed by the county architect for Lancashire, Mr. H. Litter, and Messrs. J. Bleazard and Sons were the contractors.

COMPETITIONS.

BRADFORD.—The Corporation some time ago invited competitive designs for the re-planning of the centre of the city in connection with the new Midland Railway main-line scheme, and the assessor, Mr. Reginald Blomfield, R.A., gave his award on Wednesday, as follows:—First premium of £500, Messrs. Gibson, Skipwith, and Gordon, 5, Old Bond-street, W.; second premium of £300, Messrs. Patrick Abercrombie and Lionel B. Budden, University School of Architecture, Liverpool; third premium of £200, Mr. Reginald Dann, of Crawley, Sussex, and Mr. John H. Horniman, Robertson-street, Hastings.

A new council school at Walton-on-Thames was opened last week. The architects are Messrs. Jarvis and Richards, of London.

The corporation of Weymouth have decided to build 100 self-contained workmen's houses at Pye Hill and sixteen tenement dwellings in Granville-road.

The Treasury has agreed to loans of £15,000 to Stepney and £35,000 to Woolwich Borough Councils for extension of the municipal electricity concerns, in order to meet the requirements of war contractors for additional power.

A Primitive Methodist church is about to be built at the junction of Owston and Skellow roads, Carcroft, at an estimated outlay of £1,700. The architects are Messrs. A. F. Scott and Sons, of Norwich, and the builders Messrs. Ballance and Blyth, of Mansfield.

The Stockton Town Council have agreed to give an honorarium of £50 to Mr. G. C. Mitchell, the assistant borough engineer, for the special services rendered during the illness of the late surveyor, Mr. M. H. Sykes, and during the vacancy in the office.

Mr. George Horne, sanitary inspector, Paisley, has been appointed sanitary inspector of the county of Sutherland. He was sanitary inspector for two years at Port-Glasgow, and six years at Paisley, and he has also acted as clerk of works in various parts of Scotland.

Mr. Clipston Sturgis, President of the American Institute of Architects, in a recent letter to Mr. Ernest Newton, A.R.A., the President, R.I.B.A., writes: "Our hearts are with you in the splendid struggle England is making, and the example she is putting before the world of that fine courage which is the outcome of a conviction of the right."

Mr. Karl Theodore Francis Bitter, who was chief of the Department of Sculpture of the Panama-Pacific Exposition, was struck by an automobile while crossing over Broadway, New York, in front of the Metropolitan Opera House, on the evening of April 9, and died shortly afterwards. Mr. Bitter was a native of Austria, and was born in Vienna in 1867. He emigrated to the United States in 1889. Mr. Bitter exerted an artistic influence on not only the present exposition in San Francisco, but also on those held in Chicago, St. Louis, and Buffalo.

The new post-office at Moseley, Birmingham, was opened on Monday for public use. Erected at a cost of about £8,500, it is situated in Alcester-road, some two hundred yards from the old post-office. It is built of brick, with stone facings, and occupies a frontage of 140ft., with a depth of 75ft. On the ground floor is a public office, a sorting-office, and retiring- and cloak-rooms. The apparatus-room and other offices exist on the first floor, and above, on the top floor, is a switch-room in which the telephonists will work, together with a dining-room and rest-room for the girls.

At the last meeting of the Glasgow and District Association of Burns Clubs, Mr. Charles R. Cowie, convener of the building committee, reported regarding the repairs on Burns's house at Mauchline, which were now in a forward condition. The committee's recommendations as to the Burns room being furnished as nearly as it would be in Burns's time, and that the adjacent room be set apart as a museum of relics or Burns souvenirs, were approved. The other part of the top story will be the residence of some old couple who will be in charge of the Burns room and show it to visitors. Mr. Cowie also intimated the gift of a very fine bust medallion of the poet. Mr. MacWhummel, architect, reported that the building was in a much better condition, particularly as regards the woodwork, than he would have anticipated, proving that their forebears did good work and put in good material. The whole repairs would, he hoped, be finished by the end of this month.

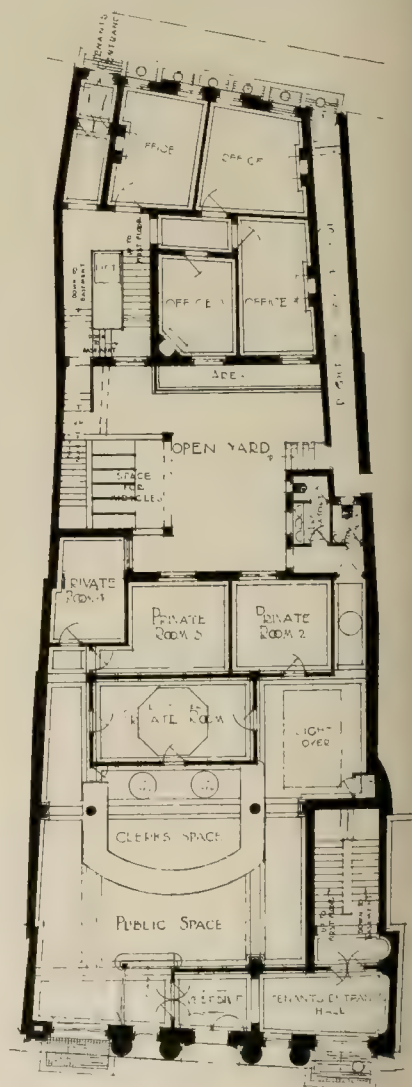
Our Illustrations.

NEW GOVERNMENT BUILDINGS, CATHAYS PARK, CARDIFF.

This distinguished and strong drawing, now at the Royal Academy, illustrates the central feature of the Welsh Insurance Commission and Labour Exchange now in course of erection at Cathays Park, Cardiff. The architect's geometrical drawings, with a general perspective, will be found in our issue for November 20 last autumn, when some particulars of the work were given. The construction generally is fire-resisting, and Portland stone is being employed for the facings of the façades. The three semi-circular arched windows light the board-room through lunettes in a barrel ceiling. The principal front is in King Edward VII. Avenue, and immediately adjacent are several of the leading public buildings of Cardiff, midst which this block of Government offices successfully holds its own by its breadth of treatment and lack of pretension. Mr. Richard J. Allison, A.R.I.B.A., of H.M. Office of Works, is the architect.

NEW OFFICES FOR THE PRUDENTIAL INSURANCE COMPANY, LEICESTER.

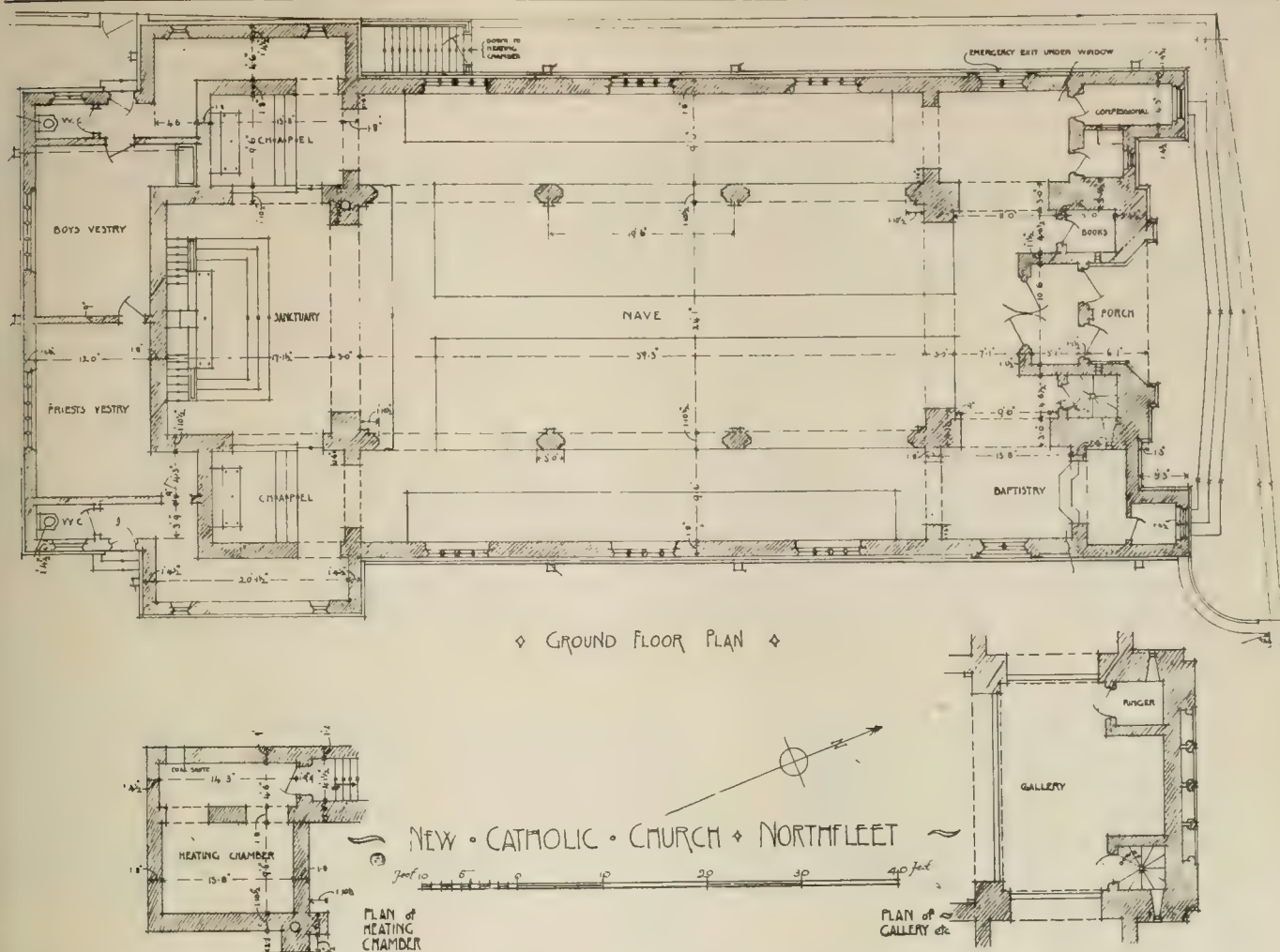
This illustration of the Prudential Offices in Leicester is from a drawing made by Mr. C. A. Farey from Mr. Paul Waterhouse's



PRUDENTIAL BUILDINGS, LEICESTER.

MR. PAUL WATERHOUSE, M.A., Architect.

original design for this building, which differs somewhat from that which is now actually being carried out. The character of the design, with a large Greek Doric Order, is retained. The buildings occupy a site with offices both in Hotel-street and Grey



Friars. The Prudential offices are on the Hotel-street front. The former frontage is entirely in Stanton Woodhouse stone, which in the case of the Grey Friars elevation is relieved by red brickwork. The general contractors are Messrs. W. Corah and Son, of Loughborough, and Mr. J. Mansell is acting as clerk of works. The drawing reproduced is at present in the Royal Academy exhibition.

NEW CATHOLIC CHURCH, NORTHFLEET, KENT.

This church, which stands on a commanding site overlooking the Thames, consists of nave, with aisles; chancel, with side chapels; and western tower, in the lower part of which is placed the organ-gallery; while the vestry accommodation is situated at the "east" end of the building. The church is built of Crowborough bricks, the roof being covered with dull red pantiles. A noticeable feature in the design is the frank use of reinforced concrete lintels, both over windows and doors, and also over some of the openings of wider span, which are, accordingly, square-headed, instead of being of arched form. The interior of the church is plastered, except as regards piers, responds, and quoins, etc., which are of Crowborough bricks. The contract amount, including the tower, is £6,436. The builder is Mr. J. B. Lingham, of Northfleet. We give plans of the building, with the view taken from the north-west, showing the entrance front and tower. This drawing is now at the Royal Academy Exhibition. Mr. G. Gilbert Scott, F.R.I.B.A., is the architect.

TEMPLE STATION.

The reconstruction of Temple Station, on the Victoria Embankment, is now well in hand, and it is hoped that the public will have the use of the new booking-hall within the next two or three months. The principal features introduced at Charing Cross Station will be repeated here as far as possible.* In

addition to the station proper, the building will contain a spacious restaurant and a large suite of offices and premises which will be occupied by the Partington Advertising Co., Ltd. We give a plan, elevations, and sections from the working plans as now being carried out. The whole of the elevations will be of Portland stone. The original of the perspective view is now at the Royal Academy. The architect for the building is Mr. H. W. Ford, of 11, Old Queen-street, Westminster, S.W.

* In our description last week of the new Higher Elementary Schools at Hyde, the name of the architect should have been given as Mr. F. Quentery Farmer, not H. Quentery Farmer, and the schools are in Cheshire, not Lancashire.

The Local Government Board have sanctioned a loan to the Birmingham Tame and Rea Drainage Board of £47,466 for the construction of intercepting sewers.

Mr. Kenneth S. Broad, of Orchard-street, Portman square, Second Lieutenant 2nd Leinster Regiment, was reported wounded in the casualty lists of the Expeditionary Force in France under date April 24.

After considerable discussion, the Montreal Board of Control have awarded the contract for building a civic library to the John Quinlan Company, the lowest tenderers. The price is £45,000. Queenstown blue limestone is to be used, the ten columns being of Stanstead granite, for which 16,000dol. extra will be paid. Megantic granite will also be employed in certain parts of the building. Only Montreal workmen are to be employed.

The new Government factory at Langley, near Birmingham, which was commenced in February, is now approaching completion, and arrangements have been made for the commencement of work in the production of war munitions. The buildings have been erected in record time, this being due to the fact that over 95 per cent of the workmen consented to the working of overtime. The new works will find employment for between 500 and 600 hands.

PROFESSIONAL AND TRADE SOCIETIES.

ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.—An ordinary meeting of the Council of the above body was held at the Institute rooms on Monday, May 10. The President, Mr. R. Caulfeild Orpen, B.A., F.R.I.A.I., occupied the chair, and there were also present: Messrs. R. M. Butler, J. H. Webb, F. Hayes, A. E. Murray, H. Alberry, C. A. Owen, W. Kaye-Parry, P. L. Dickinson, G. P. Shérifan, A. G. C. Millar, G. L. O'Connor, and F. G. Hicks, hon. secretary. The reply from His Excellency the Lord Lieutenant to the address presented by the Council on the 26th ult. was read. The announcement of His Excellency consenting to become a vice-patron of the Institute was received with applause. The report of the professional practice committee affecting building contracts arising out of the War was dealt with. The following members were recently raised to the rank of Fellowship: Messrs. Frederick Hayes, George F. Beckett, W. Sampson Jervois. Mr. H. J. Lundy was elected a Member, and Professor Wm. H. Goodyear, of New York, elected an Hon. and Corresponding Member.

Mr. W. W. Luckie, city electrical engineer, Glasgow, has been elected president of the Institution of Engineers and Shipbuilders in Scotland.

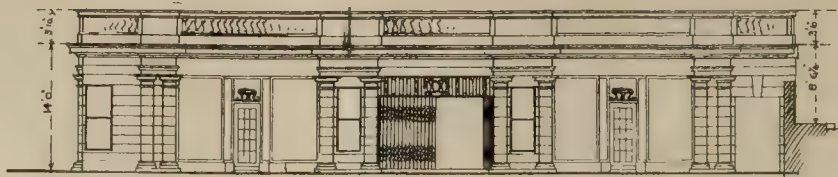
To the Guildhall Museum has been presented a fine flint axe-head characteristic of the Neolithic or Later Stone Age. It was found in the Thames, opposite Bellamy's Wharf.

The parish buildings in Charlotte-street, Wallend, are about to be enlarged at a cost of £1,700, from plans by Mr. C. S. Errington, A.R.I.B.A., Grainger-street West, Newcastle-on-Tyne.

By consent of the county authorities, the castle at Lincoln (with the exception of the modern additions) has been added to the "list of monuments the preservation of which is of national importance."

* Illustrations of the Charing Cross Station appeared in the BUILDING NEWS for October 3, 1913.

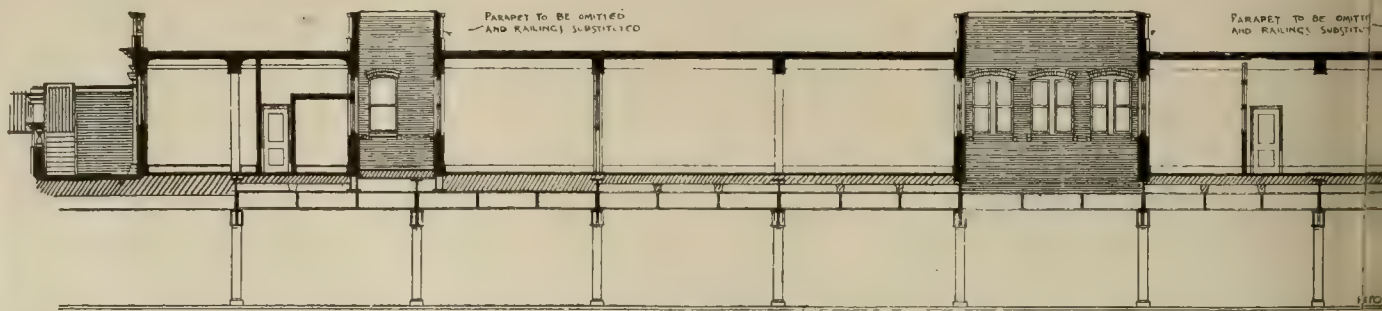
TEMPLE · STATION · DISTRICT · RAILWAY ·



EAST ELEVATION

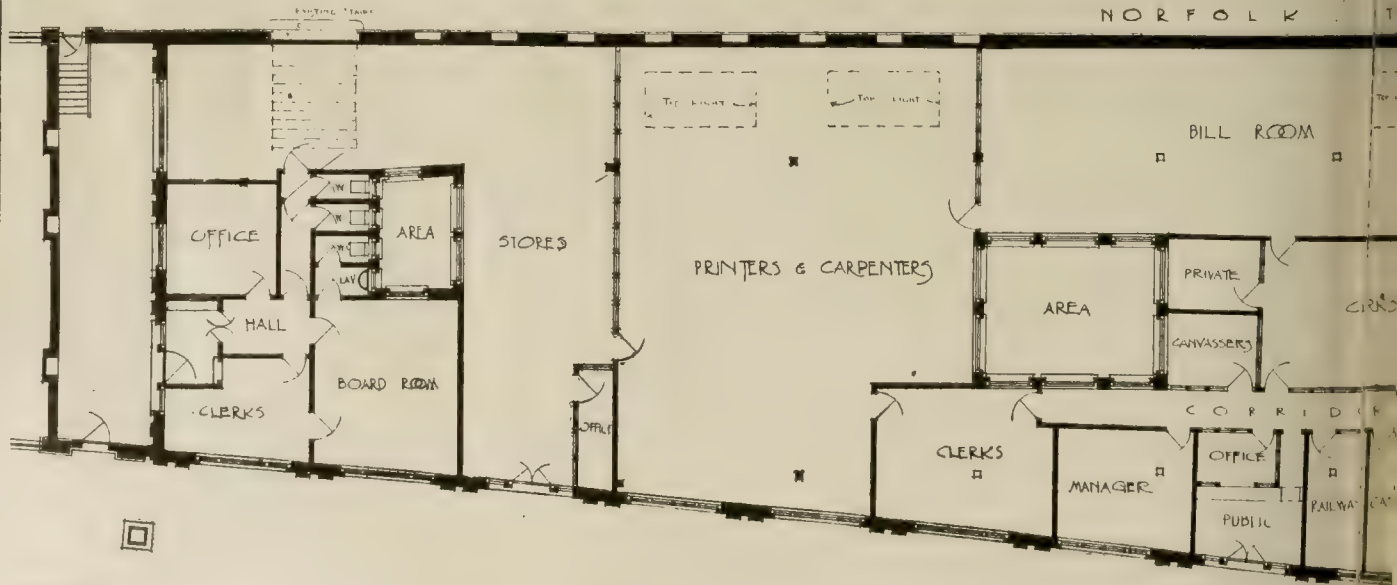


ELEVATION TO VICTORIA



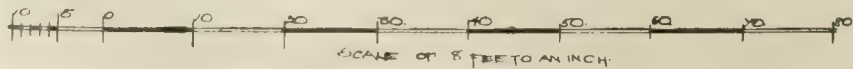
LONGITUDINAL SECTION

NORFOLK STREET



VICTORIA

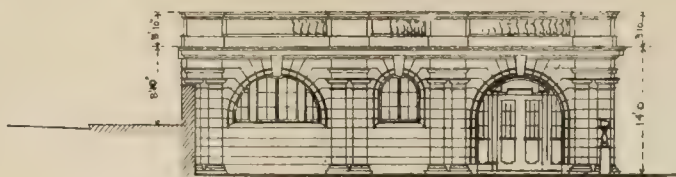
GROUND PLAN



PROPOSED * RECONSTRUCTION *



SECTION



WEST ELEVATION

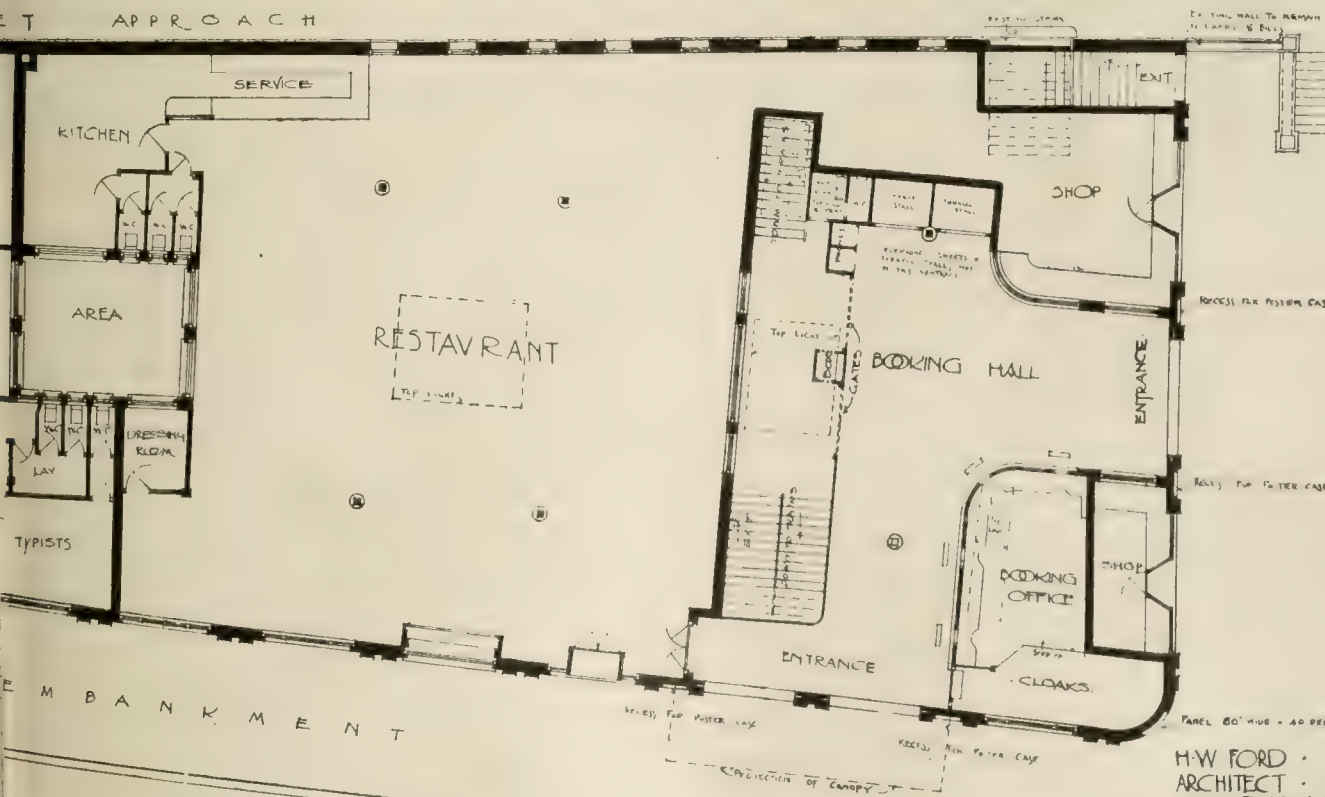


BANKMENT



N

ST APPROACH



H.W. FORD
ARCHITECT
11 OLD QUEEN ST.
WESTMINSTER SW

OBITUARY.

Mr. Alfred Samuel Goodridge, A.R.I.B.A., of Lyncombe Hil, Bath, the "father" of the Royal Institute of British Architects, died on the 17th ult., at the age of eighty-seven. In a letter to the Institute "Journal," Mr. Mowbray A. Green says: "Our late Associate's father, Henry Edmund Goodridge, who came of an old Devonshire family settled in Bath since the 18th century, was one of the pioneers of the Neo-Grec manner in the West, and executed a new Ionic façade to Argyle Chapel, Bath, in 1821; Lansdown Tower in 1825; the Cleveland Bridge and approaches in 1827; and Montebello, Bathwick Hill, in 1828, a house which remains to this day as a fine example of its period. In 1829 he erected the stone staircases and terraces at Prior Park for Bishop Baines. He built the entrance to the Lansdown Cemetery, and the Corridor, Bath, in 1845; and Fiesole, Bathwick Hill, in 1846. Amongst other works of his were Combe Down Church, the Beckford Library at Hamilton Palace, Ecclescraig, the seat of Mr. Forsythe Grant, and Downside College Chapel. He also competed for the Houses of Parliament in 1836. Alfred Samuel Goodridge was the architect of Percy Chapel, Bath, in conjunction with his father; and amongst his other buildings were the Harding Almshouses, Moyles Court, Hants; the fountain in Laura-place, Bath; Ravenscroft, Bathwick Hill; Trowbridge Town Hall; Highfield, Trowbridge, the residence of the late Sir Roger Browne; Lady Browne's Almshouses, Trowbridge, and the Browne Mausoleum in Trowbridge Cemetery. He also remodelled Lloyds Bank, Milsom-street, Bath. During his practice the reconstruction of the drainage of a large number of houses was carried out under his supervision." He had been an Associate of the Institute since 1852.

Mr. William Henry Spaul, J.P., F.R.I.B.A., of The Gables, Upper Brook-street, Oswestry, an alderman and ex-mayor of that town, was knocked down by a trap at Shrewsbury on Saturday, and died in Salop Infirmary the same afternoon, without regaining consciousness. Alderman Spaul, who was seventy-five years old, was diocesan surveyor for the diocese of St. Asaph. In Masoury he was provincial grand secretary for Shropshire, director of ceremonies of the Grand Lodge of England, and celebrated his Masonic jubilee only last week. He had carried out much work in Salop, and had been a Fellow of the Royal Institute of British Architects since 1890.

Mr. Albert Edward Lowes, A.R.I.B.A., A.S.C., attached to the 6th Northumberland Fusiliers, is reported to have been killed in action on April 26. Mr. Lowes, who was twenty-seven years of age, served his articles with Mr. Holford, of Newcastle-upon-Tyne, and was afterwards with Messrs. Marshall and Tweedie, of that city, and later with Messrs. Bradshaw, Gass, and Hope, of Bolton. He was a draughtsman of exceptional ability, and was awarded the Glover Travelling Studentship in 1912.

Mr. Wilfred Hoyle, A.R.I.B.A., of Gravesend, who was invalided home suffering from shock and pneumonia, after four months in the trenches with the British Army in France, has died in Netley Hospital. Mr. Hoyle began his architectural training at King's College, Division of Architecture, and was afterwards an improver with Messrs. Stratton and Lucas. From 1906-10 he was in the office of Mr. Geoffrey Lucas, the latter part of the time as chief assistant. Later, until he joined the Army, he was with Mr. C. E. Mallows. Mr. Hoyle had three brothers also fighting at the front, and one of these has lost his life in action.

Among those lost on the Lusitania on Friday last was Mr. Martin Van Straaten, of 63, Avenue-road, Regent's Park, the principal of a firm of enamelled-tile merchants, at 28, Little Britain, E.C., and also a highly qualified connoisseur in tapestries, furniture, and many kinds of curios; in these and other forms of art his

judgment and taste were greatly appreciated by collectors and will be much missed. Mr. Van Straaten, who was in his forty-ninth year, leaves a widow and several children. A letter from Mr. E. Guy Dawber, Hon. Secretary R.I.B.A., referring to Mr. Van Straaten, appears in another column.

The death is announced of Mr. James Rush Dixon, borough engineer and surveyor of Woolwich.

Mr. Joseph Arthur Reeve, architect, died at his residence, Yarrow Bank, Kingswear, Devon, on Monday, aged sixty-four years.

Mr. John Levick, of Livingstone House, Livingstone-road, Birchfields, Birmingham, railway contractor, who died on April 7, left £57,149.

Mr. Wm. Clark, burgh surveyor of Tayport, has been appointed burgh surveyor of Newport-on-Tay in place of Mr. Weeks, who has been appointed burgh surveyor of Irvine.

A Local Government Board inquiry was held by Mr. Courtenay Clifton at Cannock yesterday (Thursday) into an application from the urban district council for sanction to borrow the sum of £10,675 for the provision of workmen's dwellings.

Mr. John B. Fallowfield, the surveyor to the Church Urban District Council, has resigned in order to take up a position as engineer under the Crown Agents for the Colonies, and will proceed to the Gold Coast in June to take up his new duties.

Sir Richard Temple, Bart., of The Nash, Kempsey, has offered to return to Pershore Abbey the original Norman font discarded by the churchwardens in 1835 in favour of the present one, and a vestry meeting has sanctioned the application for a faculty for the removal of the font from Sir R. Temple's residence.

Among the missing Canadians is Lieut. H. E. Lloyd Owen, of the 8th Rifle Brigade, a son of the late Mr. Henry Owen, of Portmadoc and Menai Bridge. Lieut. Owen served his articles with his uncle, Mr. Joseph Owen, Menai Bridge, architect and surveyor. He then went to Canada, where he obtained an important appointment. On the outbreak of war he joined the Canadians, arriving with the first contingent in October last.

The new St. John Bridge, the largest two-hinge single-span arch in the world, was the subject of an address delivered last week at St. John, New Brunswick, by Mr. A. R. Sprenger, the Government engineer-in-charge. The span of the bridge is 565ft. between hinges. The structure will be provided with two sidewalks, each 7ft. wide, and a roadway 36ft. wide. Mr. Sprenger spoke of the constructional difficulties encountered in the gorge, where a swift current, deep water, and steep slopes called for careful design and execution.

The Wimbledon Town Council has received a notice from the Treasury that they are unable to approve the proposed borrowing by the corporation, under existing circumstances, of £70,000 from the Ecclesiastical Commissioners of England for the purchase of Wimbledon Park estate as an open space, and also that they are not prepared to sanction the borrowing of the money necessary to purchase a number of properties in Queen's-road, adjoining the town clerk's office, to be used as a site for new municipal offices.

The town council of Southampton have formally approved the plans and designs for a water-tower to be erected on the common. The building will be 100ft. in height, and around the cupola will be a balcony, approached by a staircase. It was inquired whether, as at the water-tower at Hereford and in other towns, arrangements had been made for enabling the public to ascend the tower to enjoy the beautiful view of the forest and Solent; but the committee had decided to restrict the opportunity to their own members. The estimated cost of the tower was reported to be £14,000.

The Gloucestershire Architectural Association has received from Mrs. Oscar Clark, of Gloucester, a large collection of architectural lantern-slides from negatives taken by her husband, the late Dr. Oscar Clark, a well-known medical man long in practice in Gloucester, and an enthusiastic amateur photographer. He served as president of the Gloucester Photographical Society. The slides have been classified by Mr. Walter B. Wood, A.R.I.B.A., vice-president of the association, as illustrations of (1) English Church Work, (2) English Domestic Work, (3) Continental Cathedrals and Churches, and (4) Continental Street Scenes.

Building Intelligence.

PORT OF LONDON AUTHORITY.—This body is constructing at the West India Docks two sheds of galvanised iron with concrete floors, each 504ft. long and 120ft. wide. The work, estimated to cost £35,000, was put in hand in January last, and will be completed very shortly. It will form part of a permanent programme of improvements already resolved upon. The Authority are also constructing a floor in No. 1 warehouse for the accommodation of 2,500 tons of goods, at a cost of £1,650. At Millwall Dock the adaptation is in progress of the southern half of the grain depot and siding by the construction of corrugated iron sides fitted with doors, three brick division-walls, concrete floor, and alteration to the railway lines. The area to be covered is 111,400sq.ft., and the cost of the work is estimated at £13,700. At Tilbury Dock two sheds are being constructed with an area of 86,400sq.ft., and platforms 8,400sq.ft. in extent, at a cost of £33,550. Thirty-eight acres of riverside land at Tilbury have been purchased for the purpose of future extensions of the Tilbury dock system. In connection with the dock-extension works at Tilbury, which have been in progress for some time, electric accumulators will be installed, at a cost of £5,500 for the service of the twelve electric cranes on the new river jetty for the discharge of cargo. By a recent important addition to its electrical pumping-plant, the level of the impounded water at the Victoria and Albert Docks has been raised by 2ft. 6in. One result of this deeper water has been that the bridge over the Connaught-road cutting has to be swung more frequently than formerly. With a view of avoiding inconvenience to their customers and the industrial community at Silvertown, the Port Authority has decided, at a cost of £4,000, to provide a footbridge over the cutting. This footbridge will enable the public to cross the docks at all times, except when sea-going vessels are passing through the cutting. The scheme also provides for another footbridge over the adjoining railway-lines, so as to avoid detention at the level-crossing there.

ROCHDALE.—The town council at their monthly meeting adopted plans for a proposed tuberculosis sanatorium on the Springfield estate, providing accommodation for fifty-six beds, at an estimated cost of £13,980, subject to submission to the Local Government Board. The corporation recently acquired the Springfield estate at Marland, comprising an area of land 100 acres in extent, at the price of £12,500, upon which estate there are several buildings, including the mansion known as Springfield House. For the purposes of the sanatorium a portion of the estate—comprising the house and a belt of land surrounding it, about sixteen acres in extent—has been set apart. It is intended to utilise the house as an administrative block, providing quarters there for the resident doctor, the matron, nurses, and the service maids. It is proposed to erect two new pavilions at the back of the mansion on high land. The nearest pavilion will be about 240ft. in length, and will provide thirty-two beds for nursing cases, nurses' duty room, lavatories, etc., complete, and will be about 138ft. from the back of the mansion, or administrative block. At a further distance, 100ft. away, but in a more easterly direction, so that the two pavilions shall not be behind each other, will be the pavilion for convalescent cases, about 210ft. in length, and comprising accommodation for twenty-four beds, with the nurses' duty room, lavatories, etc. Both these pavilions will be set facing the south, and will be provided with projecting verandahs in the front.

The Metropolitan Water Board Bill and Southend Water Bill were read a third time in the House of Commons on Tuesday.

The death is announced of Mr. George Roper Norrish, for many years surveyor to the old St. Saviour's District Board of Works, South-wark.



PRUDENTIAL INSURANCE COMPANY'S OFFICES, LEICESTER.
Mr. PAUL WATERHOUSE, M.A., F.R.I.B.A., Architect.



THE TEMPLE STATION, UNDERGROUND DISTRICT RAILWAY, NOW IN COURSE OF RECONSTRUCTION.



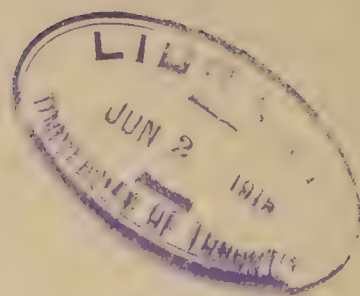


NEW GOVERNMENT BUILDINGS, CATHAYS PARK, CARDIFF

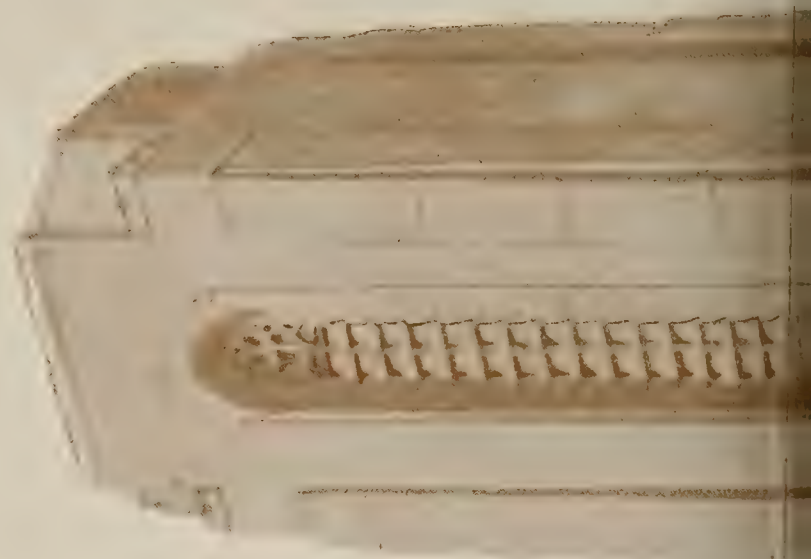
MAY 14, 1915.



INCIPAL ENTRANCE.—Mr. RICHARD J. ALLISON, A.R.I.B.A., Architect.



THE BUILDING NEWS, MAY 14, 1915.





NEW CATHOLIC CHURCH, NORTHFLEET.—MR. G. GILBERT SCOTT, F.R.I.B.A., ARCHITECT.



Correspondence.

UNFAIR TREATMENT OF ARCHITECTS IN COMPETITIONS.

To the Editor of the BUILDING NEWS.

SIR,—It seems to be the increasing practice of municipal and other authorities to retain the designs of the unsuccessful architects unnecessarily—presumably with the object of gleaning hints and having the run of the drawings of and picking the brains of the unfortunates who not only have to work for the mere chance of being successful, but have also to pay for the privilege of competing. An instance in point is that of the competition for the Rathborne dwellings in Liverpool for the Housing and Improvement department.

We received circulars on April 8 asking if we had any objection to our designs being exhibited for a fortnight. It is now (at time of writing) May 11, and they and deposit have not been returned. The answer returned on May 1, when writing the authorities, is they will be returned "in course of next few days." It will be wisdom on the part of competing architects to refuse the exhibition of their designs. This is not the only instance that I can quote.—I am, etc.,

H. D. PRITCHETT, Licentiate R.I.B.A.
Darlington.

THE LATE MR. MARTIN VAN STRAATEN.

SIR,—I am sure I shall be expressing the feelings of very many architects in deploring the death of Mr. Martin Van Straaten, who perished in the Lusitania last week.

Mr. Van Straaten for years past was known to such numbers that all will regret his sad and untimely end.

His kindly interest and never-failing courtesy, the artistic knowledge he displayed, and the endless trouble he took to develop any new suggestions, and his general helpfulness will long be remembered by all who had business dealings with him, and I should not like this opportunity to pass without placing on record the regard and esteem in which he was held.

The deepest sympathy will be extended to his family in their sad loss.—I am, etc.,

E. GUY DAWBER.

22, Buckingham-street, Adelphi, W.C.

CIGARETTES WANTED FOR ARCHITECTS ON ACTIVE SERVICE.

SIR,—About 1,000 cigarettes are now required each week by the active service committee of the A.A., for despatch to architects and other friends now fighting in France and the Dardanelles.

One friend of the Association has for several months past been sending us 100 cigarettes weekly for this purpose.

Will nine others do the same? The brands appreciated most are "Player's Navy Cut" and "Woodbines," and should be sent addressed to the Hon. Secretary of the Active Service Committee, 18, Tufton-street, Westminster, S.W.—I am, etc.,

MAURICE E. WEBB, President.

The Architectural Association,
18, Tufton-street, Westminster, S.W.
May 10, 1915.

Messrs. Darling and Pearson, the well-known Toronto architects, have been retained by the Canadian Pacific Railway to prepare plans for the new station at North Toronto. The building will cost some 800,000 dol. The head of the firm is Mr. Frank Darling, the Institute's Royal Gold Medallist for the present year.

Mr. C. E. Paynter, 17, Kingsmead-road South, Oxton, Birkenhead, a well-known Liverpool gentleman, is among the victims of the Lusitania massacre, his body having been recovered. He was a member of the firm of Messrs. Alfred Dobell and Co., timber merchants. He was elected a member of the Dock Board in 1911 in the interests of the timber trade.

LEGAL INTELLIGENCE.

TIPTON SEWERAGE-WORKS.—Mr. Pollock, Official Referee, after a hearing which occupied six days, gave judgment on Tuesday in the action in which Mr. Arthur John Powdrill, as assignee of a contract entered into between Messrs. Thompson and Farley and the Tipton Urban District Council, sought to recover from that council £350 alleged to be due in respect of the balance of contract price for carrying out the Tipton sewerage-works, which it was alleged had been wrongfully deducted on account of charges paid by the district council to the Birmingham Canal Navigation Company for drawing off the water of the canal during the process of carrying the sewer-pipes across the waterway. The Official Referee, in his judgment, observed that the main question related to the alleged defective work of the contractors, which it was said was responsible for the second drawing off of the water from the canal, the charge for which formed the subject of the action. He found that the contractors had no notice of the agreement between the council and the canal company under which the money had been paid, nor did they receive any notice that it was about to be paid. As to the question of leakage, which caused the second withdrawal of the water, and whose fault it was, that did not amount to such damage as was provided for by the terms of the specification. It appeared clear that it was impossible, as the work was being carried on, to prevent water escaping under the pipes and percolating through the bed of the canal. The contractors were, in his opinion, entitled to the £206 on the original claim and £225 on the amended claim. Judgment would therefore be for the plaintiff for £431, with costs. A stay was granted in view of an appeal.

Mr. A. D. Greatorex, borough surveyor of West Bromwich, has been gazetted a lieutenant in the Territorial Force Reserve, and appointed to No. 1 Supernumerary Company 2/6 South Staffordshire Regiment.

A Sinclair Memorial-hall is to be added to the Presbyterian church buildings, Duncairn, Belfast. Messrs. Young and Mackenzie, of Belfast, are the architects, and Messrs. McLaughlin and Harvey the builders.

Mr. George Gledhill, the surveyor to the late Balby-with-Hexthorpe Urban District Council, has been appointed surveyor and sanitary inspector to the newly-constituted urban district of Adwick-le-Street, at a salary of £180 per annum.

Mr. R. Chart, for many years surveyor to the late Croydon Rural District Council, has been appointed to a similar office under the newly constituted Coulsdon and Purley Urban District Council, which is formed out of the most populous portion of the old area.

A new Presbyterian chapel for Oxford University students, which will be known as St. Columba was opened on Saturday. The building, which is situate in Alfred-street, High-street, is in the Tudor-Gothic style. The cost has been about £10,000, and 250 sittings are provided.

As a consequence of recent changes in the departments of the Manchester Corporation, Mr. Arnold Pickup, B.Sc., Tech., assistant chemist at the Davy Hulme Laboratory of the Rivers Committee, has been placed in charge of the analytical work at the Withington Sewage works of the Manchester Corporation.

A pulpit from the demolished church of St. Mary, Rotterdam, has been presented to Lincoln Cathedral by Mr. A. C. Benson as a memento of his father, the Archbishop of Canterbury, and is being erected on the south side of the nave. The church was built in the reign of our Queen Anne for the use of English residents in that port.

The museum of the Sanitary Institute in Princess-street, Bombay, was opened by Lord Willingdon on March 30. The plans and estimates were prepared by Mr. Dunn, of Bombay, and the contract has been carried out by Mr. Rajoo Babaji, under the supervision of Mr. Mackison, Executive Officer, Bombay Municipality. The ground floor is occupied by the Anti-Tuberculosis League, and on the first floor are a library, sanitary museum, and lecture-hall.

At the last meeting of the city council of Newcastle-on-Tyne, the town clerk reported that the Local Government Board had sanctioned the borrowing of £26,781 and £1,801 for the provision of workmen's dwellings in the St. Lawrence and Walker-road districts. After a long debate it was decided by 31 votes to 18 to adopt the recommendation of the housing committee for the immediate development of part of the Walker estate by providing 688 dwellings at a capital cost of £117,781 16s. 8d., on which was shown an annual surplus of £408 8s. 10d.

STATUES, MEMORIALS, &c.

EALING, W.—A memorial to the late Mr. Charles Jones, who for fifty years was engineer and surveyor to the local authority of Ealing, has just been completed and erected at the foot of the main staircase of the Ealing Town Hall. The central feature is a deeply-sunk circular panel containing a full-face bust of the late borough surveyor, executed in semi-relief. Beneath the bust is the Ealing coat of arms, with its motto, "Respect, Prosperity," to which the designer has appended the word "Circumspect." On each side of the coat of arms is the inscription, "Fifty years surveyor and engineer to the Ealing Local Authority, from May 25, 1863, until his decease, August 24, 1913. Lamented, regretted." Raised panels at the sides of the bust bear the inscription, "Charles Jones, M.Inst.C.E., 1830-1913." The memorial is ornamented with festoons, and surrounded by a moulding based on the egg-and-dart ornament. The work, which is executed in bronze, has been carried out by Mr. Frank Bowcher, of Bedford Park. A children's ward has been added to the Ealing King Edward Memorial Hospital as a further memorial to the late borough surveyor.

The Orpheum Theatre, belonging to Harvard College, Boston, Mass., is about to be reconstructed at an outlay of 250,000 dol.

Mr. Oscar Wenderoth, who for a number of years has been the supervising architect of the United States Treasury Department at Washington, D.C., has resigned.

The urban district council of Oakengates have received a letter from the Local Government Board, sanctioning a loan of £1,045 for the purchase of land at Wainbridge in connection with the sewage-disposal scheme.

The Middlesex County Council have agreed to fix the rate of remuneration to any quantity surveyors employed at 1½ per cent. on contracts of £2,000 or under, 1¼ per cent. between £2,000 and £5,000, and 1 per cent. beyond £5,000.

The Earl of Derby, who is Lord of the Manor of Ormskirk, has appointed Mr. Robert Anderson, of Cirencester, as land agent of his Lancashire and other estates, in succession to the late Mr. J. J. Hornby, who died suddenly three weeks ago.

The town council of Barrow-in-Furness have appointed Mr. Fred Chadderton as manager of the gas and water undertakings at a commencing salary of £350 per annum. Mr. Chadderton has been assistant manager at Barrow for seven years.

Mr. E. L. Horwood, chief architect of the Department of Public Works, Ottawa, has completed his design for the new National Observatory for the Dominion, at Little Saanich Mountain, Victoria, B.C., and sealed tenders for carrying out the work are due on the 18th inst. at the Office of Works, Ottawa.

The Housing Committee of the Dublin Corporation have approved the plans in connection with the Ormond Market housing scheme as amended in accordance with the requirements of the Local Government Board. The estimated cost of the scheme is £24,000. It is proposed to erect at present 49 three-room cottages and 56 two-room flats, or 105 dwellings in all.

Mr. Charles Sims, R.W.S., A.R.A., has presented to the Wounded Allies Relief Committee the gold medal for oil painting awarded to him by the Carnegie Art Institute at the International Exhibition, Pittsburg, U.S.A. (1912). Mr. Sims originally intended that the medal, of which the actual gold is worth some £50, should be melted down. It is hoped, however, that it may be bought as it stands. Applications to see it should be addressed to Miss Lambert, Wounded Allies Relief Committee, Sardinia House, Kingsway, W.C.

Mr. H. M. Hobart and Mr. C. E. Skinner, who were sent to London as delegates from the American Institute of Electrical Engineers to confer with the Standards Committee of the Institution of Electrical Engineers of Great Britain in February, completed their work on March 25, and made their formal report to the Standards Committee of the American Institute of Electrical Engineers on Saturday. They reported that their mission was successful and that substantial agreement between the standards of the two countries has been reached.

On Saturday, Dr. Rawstone, the Suffragan Bishop of Whalley, dedicated the new chancel and chapel which have been built as additions to St. Andrew's Church, Dearnley. The architect is Mr. F. P. Oakley, who designed the original part of the church, and the style is in keeping with the nave, being Early English in its main features. On the north side of the chancel has been added a lady-chapel, which will be used for small services. Many special gifts have been presented.

Our Office Table.

On Saturday afternoon, May 8, the Post Office Engineering Volunteer Training Corps and the National Guard Engineers' Unit took part in a joint parade near Lancaster Gate, Hyde Park, afterwards marching to the Powder Magazine, Kensington Gardens. Arrived at this point, the Post Office Engineers, under their commandant, Captain Gunton, commenced the installation of field telegraph and telephone systems between the Marble Arch and the Round Pond; while the National Guard Engineers, under the command of Mr. W. Noble Twelvetrees, Acting-Adjutant, made a survey for the construction of a trestle bridge to be erected for use by the Post Office Corps, and subsequently acted as an attacking party, whose object was to pursue and capture one of the field telegraph companies operating in Hyde Park. The bridge mentioned is now in course of construction by the Engineers' Unit, at the headquarters of the London Brigade R.G.A., Offord-road, Barnsbury, where drills and engineering practice take place on Tuesday, Wednesday, and Thursday evenings.

The London County Council is prepared to award for the session 1915-16 a limited number of free places at the Imperial College of Science and Technology, South Kensington, S.W. The free places will be awarded on consideration of the past records of the candidates, the recommendations of their teachers, the course of study which they intend to follow, and generally upon their fitness for advanced study in science as applied to industry. Candidates will not be required to undergo a written examination. It is possible that the free places may be extended to two or more years. Parents (or guardians) of candidates must be resident within the administrative County of London, except in the case of self-supporting candidates over 21 years of age on July 31, 1915, who must themselves be resident within the county. Candidates must be day students at an approved institution, and must have been in regular attendance at an appropriate course of study for at least two sessions. Candidates will be required to show that they are qualified to enter on the fourth year of the course of study selected. The fourth year of a course at the Imperial College is in the nature of a post-graduate course. Application-forms (T. 2/268) may be obtained from the Education Officer, L.C.C. Education Offices, Victoria Embankment, W.C., and must be returned not later than Saturday, May 22, 1915.

Mr. Reginald Blomfield, R.A., in a letter to the daily Press, defends the administration of the Chantrey Bequest by the President and Council of the Academy, and thinks that body is likely to be far better equipped to select pictures for purchase from trust funds than the Trustees of the Tate Gallery, to whom it is proposed to transfer the powers. While he admits that the trustees are gentlemen of unblemished reputation and eminent social position, they are only amateurs in art. "With the single exception of Sir Edward Poynter, they do not include one artist of assured and admitted reputation; but they do include directors of galleries, amateurs, and dealers, and certain gentlemen whose writings are well known for their dislike of the Royal Academy and persistent abuse of everything it does." To this Sir Martin Conway rejoins: "No one would dream of appointing a committee of cooks to pronounce on the quality of a dinner. The proof of a pudding is in the eating. It is the same with works of art: they are made by artists to give pleasure to other people. It is for the people appealed to to say whether they are pleased, not for artists to say whether they ought to be."

The British Industries Fair at the Agricultural Hall, Islington, which is open until the 21st inst., should be useful in bringing manufacturers into closer contact, in addition to furthering the principal object in view—the capture of German trade. About 400 firms, connected principally with the stationery,

glass, cutlery, and china trades, have most creditable exhibits, among which we noticed Messrs. Doulton and Co., Ltd., Carter and Co., Ltd., Chance Bros. and Co., Ltd., and the Leeds Fireclay Co., Ltd. Admission is by invitation of the Board of Trade only.

In consequence of the investigations of the Royal Commission appointed to inquire into the charges made by the Opposition in connection with the contracts for the new buildings at Winnipeg of the Manitoba Parliament, the Roblin Government resigned on Wednesday, and Mr. Crawford Norris, the Leader of the Opposition, has been called upon to form a Government. The retiring Government will resign a sufficient number of seats to give the new Government a majority in the House till a General Election can be held.

Rents for cottage houses are to be raised in Liverpool. This was the unanimous vote of the Liverpool Property Owners' Association at their meeting a few days ago. The extent of the advance was left to individual members, and the time contingent upon a week or a month's notice, as the case may be. There is a house-famine in Liverpool owing to the cessation of building operations, which will pave the way to a successful issue, from the owners' standpoint. Their case is based on increased cost of maintaining the fabric and the higher rates demanded, towards which the tenant, it is contended, should subscribe his share. Property owners assert that, compared with five years ago, there is an additional expenditure in rates and maintenance of over £2 10s. per annum, and that the profits on property have almost reached the vanishing point. But what of the tenants?

The annual report of the Board of Agriculture states that on December 31, 1914, the total quantity of land let as allotments by local authorities in England and Wales was 33,523 acres, of which 8,556 acres were the property of the Councils, and 24,967 acres were leased. This land is let to 130,526 individual tenants and 52 associations. During 1914 applications were received for allotments from 12,731 individuals and two associations, and the total quantity applied for was 3,101 acres. Allotment authorities are empowered by the Act to erect dwelling-houses for occupation with any allotment of one acre or more, and 32 applications for houses were received during the year, but at present no houses have been actually erected. About 832 acres were acquired for allotments during the year 1914, as compared with 1,395 acres in 1913. The quantity purchased was 194 acres, and the price paid £17,050; while the quantity leased was 644 acres at rents amounting to £1,365. Thirty-three acres of the land purchased by allotment authorities were formerly held on lease by these authorities. The reduction is attributed to the War. The average price of land purchased in 1914 was £88 an acre, and the average rent of land leased £2 2s. 4d. an acre.

The annual Proceedings of the Bristol Society of Architects is got up in a tasteful manner and has as a frontispiece a reproduction of the portrait by Sir Thomas Lawrence, of the first president, J. Scandrett Harford, D.C.L., F.R.S., Sheriff of Cardiganshire in 1824, who died on April 16, 1866, aged 81. The Proceedings of the sister organisation, the Devon and Exeter Architectural Society, also to hand, gives a portrait of the president for the ensuing session, Mr. Charles Cheverton, M.S.A., of Devonport. Each publication contains the annual report, presidential address of last session, and a list of Members and Associates.

Some very necessary and useful hints on the use of roof coverings will be found in "Booklet N," just issued by Messrs. D. Anderson and Son, Ltd., of the Lagan Felt Works, Belfast, illustrating and describing the use of their excellent "Rok Roofing," which many of our readers have found most satisfactory, and which is one of the results of the experience of a firm that was supplying roofing-felt to the War Office during the Crimean War, and has since covered roofs

of all kinds of buildings in every country under the sun, illustrations of which are given. Only the highest grade of wool felt is used in the manufacture of "Rok" roofing. This is saturated with an elastic water-proofing compound, which does not dry out or evaporate in any climate, as it contains no oils or volatile matter. The coating on the surface is a permanent one, composed of a natural bitumen of very high melting-point. There is nothing of an organic nature in either the saturating or coating compound. "Rok" is acid and alkali proof. White ants won't attack it. Rain-water from roofs covered with it can be used for domestic purposes, and being an excellent non-conductor, it insures an even temperature, and is therefore an ideal roofing for hot climates.

Various steps are being taken by the Legislature of British Columbia to develop further the important timber industry of the Province. One of the items in the recent Estimates is £10,000 set down by Mr. W. R. Ross, the Minister of Lands, for the development of the export trade by advertising in Europe the principal qualities and uses of the timbers of the province. There are four chief varieties of timber in British Columbia—Douglas fir, cedar, spruce, and hemlock—besides others of less importance, but yet of considerable value. It is pointed out that it will not be sufficient to find a market for the higher grades of timber alone; they must also look for a market for the lower grades. One of the chief difficulties in the export trade under present conditions is the disposal of the class of timber not called for by the existing trade.

Six types of reinforced-concrete fence-posts have been tested under the direction of the committee on signs, fences, and crossings of the American Railway Engineering Association. All posts were made of 1:2:4 concrete, using broken stone or gravel aggregate not more than $\frac{1}{4}$ in. in size, and were about one year old when tested. Two round, one square, one half-round, one T-shaped, one triangular section were used, all 7 ft. long, all of tapering outline except the last. The reinforcement consisted of various sizes of steel wire or rods, and the lateral dimensions varied from 5 in. to 6 $\frac{1}{2}$ in. at the base to 3 in. to 4 $\frac{1}{2}$ in. at the top. Impact, cross-bending, and cantilever bending tests were made. The best results in all cases were given by the round tapering post 5 $\frac{1}{2}$ in. in diameter at the base and 4 in. in diameter at the top, reinforced with six No. 8 wires. The other smaller circular post reinforced with wires also gave very good results. The tests indicated that this form of post, with several reinforcing wires, or the T-form with three $\frac{1}{4}$ in. rods, was the strongest and most reliable.

The Liverpool Corporation have received the sanction of the Local Government Board to a loan of £24,500 for a smallpox hospital.

The newly-constituted urban district council of Beddington and Wallington have decided to offer the surveyor a salary of £300 a year, and the sanitary inspector £160 a year.

Mr. H. W. Brown, M.Inst.C.E., county surveyor of West Sussex, has been elected by the surveyors of Kent, Surrey, and Sussex, comprising 148 members, as their representative on the council of the Institution of the Municipal and County Engineers.

The corporation of Stoke-on-Trent have received a grant of £1,020 from the Road Board towards the cost of improving Federation-road at an estimated cost of £3,852 and £2,677 towards Scotia-road, Wedgwood-street, and Waterloo-road improvements, the cost of which is estimated at £10,100.

An examination for qualifying sanitary inspectors under the provisions of the Public Health (London) Act, 1891, was concluded on Monday at the Examination Hall, Bloomsbury. The examiners were Dr. W. J. Howarth, Medical Officer of Health for the City of London; Dr. Charles Porter, Marplebone; Dr. O. Hall, Plymouth; and Mr. R. Stephen Ayling, F.R.I.B.A. Candidates were present from several provincial towns, as well as the London district, and 70 per cent. succeeded in passing the full examination.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Royal Institution. "The Archives of Westminster Abbey," by the Rev. Canon E. H. Pearce, M.A., Treasurer. 9 p.m.

SATURDAY (To-morrow).—Geologists' Association. Excursion to Leighton Buzzard. From Euston, 12.30 p.m.

MONDAY.—Royal Institute of British Architects. "The Evolution of the Architectural Competition," by H. V. Lanchester, F.R.I.B.A. 8 p.m.

WEDNESDAY.—Institute of Sanitary Engineers. Visit to Mortlake. Assemble at the Council House, High-street, Mortlake. 2.30 p.m.

SATURDAY (May 22).—Geologists' Association. Excursion to St. Leonards. Train from Cannon-street, 9.28 a.m.

The Local Government Board have sanctioned loans to the city council of Leeds of £158,356 for the electricity undertaking and £40,000 for the gas undertaking.

Mr. J. B. Fayers has resigned his position as building surveyor under the Watford Urban District Council, as he has obtained another post under the urban district council of Halstead.

The death is announced as having occurred suddenly, from pleurisy, at Grassthorpe, Notts, of Mr. John William Fair, architect, of London, Bexhill, and Henley-on-Thames. Mr. Fair was in his forty-fourth year.

There is to be a special general meeting of the Kent Archaeological Society at the Castle, Tonbridge, on Wednesday next, when an account will be given of the excavations which were carried out there by the Tonbridge Urban District Council some three years ago.

Mr. Hubert, Assistant Inspector-General of Forests for India, has accepted the post of Conservator of Forests in the Federated Malay States and the Straits Settlements for three years, Mr. Troupe, agriculturist from the Dehra Forest Research Institute, succeeding him.

The Bishop of Bristol dedicated on Saturday the parish hall, which has been erected on a site at the rear of St. Aidan's Church, overlooking the Avon River at Bristol. The hall has been constructed, at a cost of £5,100, from plans by Mr. C. Rowley, of Bristol. The builders were Messrs. Ridd and Sons, of the same city.

The Metropolitan Public Gardens Association are continuing their opposition to a portion of the London County Council's General Powers Bill, which would enable the Council to let on building leases the frontages of parks and open spaces acquired for public use, and to enclose and make charges for the use of parts set aside for games of various kinds.

Mr. Archimedes Russell, an architect, of Syracuse, New York State, died on April 3. Mr. Russell was born at Andover, Mass., in 1840, studied architecture in Boston, and began practice in Syracuse in 1862. He designed many public buildings in Central New York. When Mr. Levi P. Morton was Governor, Mr. Russell was appointed architect to the State Commission which completed the Capitol at Albany.

At a meeting of the town improvement committee of Newcastle-on-Tyne Corporation the resignation was accepted of Mr. H. Lightfoot, a draughtsman in the city engineer's department. Mr. Lightfoot has been appointed engineer-assistant to the Port of London Authority. It was decided to send a letter to Mr. Lightfoot expressing appreciation of his services to the corporation and congratulating him on his new appointment.

At the last meeting of the Dartford Urban District Council a letter was read from the Local Government Board with reference to the proposed housing scheme for Dartford, stating that they were satisfied as to the need for the provision of working-class houses in the town, but the proposed site did not appear satisfactory, as it was low-lying and liable to flooding, and would be costly to build upon. They asked the council to give the matter further consideration. The letter was referred to committee.

At the meeting on Monday of the rural district council of Clutton a letter was received from the Local Government Board with reference to the proposals of the council for a scheme of water supply for the parishes of Chelwood, Chew Magna, Chew Stoke, Norton Malreard, Publow, and Stanton Drew, at an estimated cost of over £10,000, stating that the Board would consider an application for their sanction, but at the present moment they could not promise to authorise a loan. The council resolved that the whole question of water supply be adjourned.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

Owing to stoppage of supplies, all prices have advanced an average of 15 per cent.

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£9 12 6 to	£9 17 6
Wrought-Iron Girder Plates	9 15 0 ..	10 0 0
Steel Girder Plates	9 15 0 ..	9 17 6
Bar Iron, good Staffs	6 5 0 ..	8 10 0
Do., Lowmoor, Flat, Round, or Square	22 0 0 ..	0 0 0
Do., Welsh	5 15 0 ..	5 17 0
Boiler Plates, Iron—		
South Staffs	8 0 0 ..	8 15 0
Best Suedshill	9 0 0 ..	9 10 0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s. to £9. Ditto galvanised, £14 to £15 10s. per ton

	No. 18 to 30.	No. 23 to 24
Galvanised Corrugated Sheet Iron—		
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0 ..	£13 10 0
Best ditto	13 10 0 ..	14 0 0

	Per ton.	Per ton.
Cast-Iron Columns	£8 17 6 to	£8 10 0
Cast-Iron Stanchions	6 17 6 ..	8 10 0
Rolled-Iron Fencing Wire	8 5 0 ..	8 10 0
Rolled-Steel Fencing Wire	7 5 0 ..	8 10 0
Galvanised	8 15 0 ..	9 5 0
Cast-Iron Sash Weights	6 0 0 ..	6 5 0
Cut Floor Brads	10 15 0 ..	—
Corrugated Iron, 24 gauge	16 0 0 ..	—
Galvanised Wire Strand, 7 ply, 14 B.V.G.	14 5 0 ..	—

B.B. Drawn Telegraph Wire, Galvanised—
0 to 8 10 12 B.W.G.
£10 10s. £10 15s. £11 0s. £11 5s. £11 15s. per ton.

	Per ton.	Per ton.
Cast-Iron Socket Pipes—		
3in. diameter	£6 15 0 to	£7 2 6
4in. to 6in.	6 10 0 ..	6 13 6
7in. to 24in. (all sizes)	6 17 6 ..	7 2 6

[Coated with composition, 5s. 0d. per ton extra. turned and bored joints 5s. per ton extra.]

	Per ton.	Per ton.
Iron—		
Cold Blast, Lillieshall	80s. 0d. to	127s. 6d.
Hot Blast, ditto	87s. 0d. ..	97s. 0d.
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—		
Gas-Tubes	67½ p.c.	
Water-Tubes	63½ ..	
Steam-Tubes	60 ..	
Galvanised Gas-Tubes	55 ..	
Galvanised Water-Tubes	51½ ..	
Galvanised Steam-Tubes	45 ..	

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	£25 10 0 to	—
Country	26 10 0 ..	—
Lead Barrel Pipe, Town	26 10 0 ..	—
Country	27 10 0 ..	—
Lead Pipe, Tinned inside, Town	27 10 0 ..	—
Country	28 10 0 ..	—
Lead Pipe, Tinned inside and outside	30 0 0 ..	—
Country	31 0 0 ..	—
Composition Gas-Pipe, Town	28 10 0 ..	—
Country	29 10 0 ..	—
Lead Soil-pipe (up to 4in.) Town	28 10 0 ..	—
Country	29 10 0 ..	—

[Over 4½in. £1 per ton extra.]

	Per ton.	Per ton.
Lead, Common Brands	17 17 6 ..	£18 12 6
Lead Shot, in 2½lb. bags	24 15 0 ..	—
Copper Sheets, sheathing & rods	100 0 0 ..	101 0 0
Copper, British Cake and Ingot	87 0 0 ..	88 0 0
Tin, English Ingots	164 0 0 ..	165 0 0
Do., Bars	165 0 0 ..	167 0 0
Pig Lead, in lowb. Pigs (Town)	20 2 6 ..	21 2 6
Sheet Lead, Town	25 0 0 ..	—
Country	26 0 0 ..	—
Genuine White Lead	34 0 0 ..	—
Refined Red Lead	31 0 0 ..	—
Sheet Zinc	75 0 0 (net)	—
Old Lead, against account	19 10 0 ..	—
Tin	9 0 0 ..	—
Cut nails (per cwt. basis, ordinary brand)	0 14 0 ..	—

* For 5 cwt. lots and upwards.

SLATES.

	in. in. 2 s. d.	per 1,000 of
Blue Portmadoc ..	30 × 10 .. 12 13 6	1,200 at r. str.
" ..	16 " 8 .. 6 12 6	" "
Blue Bangor	30 " 10 .. 13 9 6	" "
" ..	30 " 12 .. 13 17 6	" "
First quality	30 " 10 .. 13 0 0	" "
" ..	30 " 12 .. 13 15 0	" "
" ..	16 " 8 .. 7 5 0	" "
Eureka unfading green	20 " 10 .. 15 17 6	" "
" ..	20 " 12 .. 18 7 6	" "
" ..	18 " 10 .. 13 5 0	" "
" ..	16 " 8 .. 10 5 0	" "
Permanent Green	30 " 10 .. 11 13 6	" "
" ..	18 " 10 .. 9 12 6	" "
" ..	16 " 8 .. 6 12 6	" "

BRICKS.

(All prices net.)

First Hard Stocks ..	£1 15 0 per 1,000	alongside, in
Second Hard Stocks ..	1 11 0 ..	" driver.
Mild Stocks	1 9 0 ..	" "
Picked Stocks for		" delivered
Facings	2 5 0 ..	at rly. stn.
Flettons	1 14 0 ..	" "
Pressed Wire Cuts ..	1 18 0 ..	" "
Red Wire Cuts	1 14 0 ..	" "
Best Fareham Red ..	3 12 0 ..	" "
Best Red Pressed ..		" "
Rnabon Facing	5 0 0 ..	" "
Best Blue Pressed ..		" "
Staffordshire	3 15 0 ..	" "
Ditto Bullnose	4 0 0 ..	" "
Best Stourbridge ..		" "
Firebricks	4 0 0 ..	" "
2½in. Best Red Ac-		" [Net, delivered in
crington Plastic ..	4 10 6 ..	full truckloads
Facing Bricks		in London.]

3½" Accrington Best Red Plastic Facing per 1,000	
Bricks	£2 10 0
3½" ditto Second Best Plastic ditto	2 2 6
Ditto Ordinary Secondary Bricks	1 11 3
Ditto Plastic Engineering Bricks	1 17 6

Sewer Arch Brick not more than 3½ in thickest part

3½" Chimney Bricks fit for outside work ..	2 0 0
3½" ditto ditto through and through	2 0 0
3½" Beaded, Ovolo and Bevel Jamb; Octagons; 2½" and 1½" radius Bullnoses; Stock patterns	3 7 6

Accrington Air Bricks, 9" × 3 course deep, each 0	0 0 6
Ditto ditto 9" × 1 course	0 0 3

ACCRINGTON CAMBER ARCHES:—

3 course deep, 4½" soffit, per foot opening ..	0 1 3
4 ditto 4½" ditto ditto ditto ..	0 1 8
5 ditto 4½" ditto ditto ditto ..	0 2 1
6 ditto 4½" ditto ditto ditto ..	0 2 6
3 ditto 9" ditto ditto ditto ..	0 2 1
4 ditto 9" ditto ditto ditto ..	0 2 11
5 ditto 9" ditto ditto ditto ..	0 3 6
6 ditto 9" ditto ditto ditto ..	0 4 6

Net free on rail, or free on boat at works.

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

	White, Ivory, and Salt Glazed.	Best. Buff, Cream, Other Second.	Best. Seconds, Buff, Cream, Other Second.	Best. Seconds, Buff, Cream, Other Second.
Stretchers—				
£12 7 6 £10 17 6 £13 17 6 £17 17 6 £12 7				
Heads—				
11 17 6 10 7 6 13 7 6 17 7 6 11 17				
Quoins, Bullnose, and 4½in. Flats—				
15 17 6 14 17 6 17 17 6 21 7 6 15 17				
Double Stretchers—				
17 17 6 16 7 6 20 17 6 24 7 6 17 17 6				
Double Heads—				
14 17 6 13 7 6 17 17 6 21 7 6 14 17 6				
One side and two ends, square—				
18 17 6 17 17 6 21 17 6 26 7 6 18 17 6				
Two sides and one end, square—				
19 17 6 18 7 6 23 17 6 26 17 6 19 17 6				
Splays and Squints—				
17 7 6 15 7 6 21 17 6 24 7 6 17 7 6				
Plinth and Hollow Bricks, Stretchers and Heads—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Double Bullnose, Round Ends, Bullnose Stops—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Rounded Internal Angles—				
4d. each 3d. each 5d. each 5d. each 4d. each				

MOULDED BRICKS.

Stretchers and Heads—				
8d. each 8d. each 8d. each 8d. each 8d. each				
Internal and External Angles—				
1½ each 1½ each 1½ each 1½ each 1½ each				
Sill Bullnose, Stretchers, and Heads—				
5d. each 4d. each 6d. each 6d. each 5d. each				
Majolica or Soft Glazed Stretchers and Heads—				
Per 1,000	£22 17 6			
Quoins and Bullnose	27 17 6			

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours by 4½in. by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.	s. d.
Thames Sand	7 6 per yard, delivered
Pit Sand	7 0 ..
Thames Ballast	6 0 ..

Best Portland Cement

Ground Blue Lias Lime

Exclusive of charge for sacks.

Grey Stone Lime

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

STONE.*

Red Mansfield, in blocks	per foot cube £0 2 4
Darley Dale, ditto	" 0 2 3
Red Corsehill, ditto	" 0 2 2
Closeburn Red Freestone, ditto ..	" 0 2 0
Ancaster, ditto	" 0 1 10
Greenshill, ditto	" 0 1 10
Beer, ditto	" 0 1 6
Chilmark, ditto (in truck at Nine Elms)	" 0 1 10½
Hard York, ditto	" 0 2 0
Do. do. 6in. sawn both sides, landings, random sizes	per foot sup. 0 2 8
Do. do. 3in. slab sawn two sides, random sizes	" 0 1 3

* All F.O.B. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	£ s. d.
Ditto, ditto, Nine Elms Depot	"	0 1 7½
Beer Stone, delivered on rail at Seaton Station	"	0 1 1
Ditto, delivered at Nine Elms Station	"	0 1 7½
Portland Stone, in random blocks of 20ft. average:—		
Delivered on road waggons	Brown	White
at Paddington Depot,	White Bed.	Base Bed.
Nine Elms Depot, or	Per foot cube.	
Pimlico Wharf	£0 2 3	£0 2 4½

TILES.

	s. d.	Delvrd. at
Plain red roofing tiles	42 0	per 1000 ry. sn.
Hip and Valley tiles	3 7	per doz.
Broseley tiles	50 0	per 1000
Ornamental tiles	52 6	"
Hip and Valley tiles	4 0	per doz.
Ruabon red, brown, or brindled ditto (Edwards)	57 6	per 1000
Ornamental ditto	60 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 0	"
Selected "Perfecta" roofing tiles: Plain tiles (Peake's)	46 0	per 1000
Ornamental ditto	48 6	"
Hip tiles	3 10½	per doz.
Valley tiles	3 4½	"
"Rosemary" brand plain tiles	48 0	per 1000
Ornamental tiles	50 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 8	"
Staffordshire (Hanley) Reds or brindled tiles	42 6	per 1000
Hand-made sand-faced	45 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"
Hartshill "brand plain tiles, sand-faced	45 0	per 1000
Pressed	42 6	"
Ornamental ditto	47 6	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"

OILS.

Rapeseed, English pale, per tun	£28 15 0 to £29 5 0
Ditto, brown	26 15 0
Cottonseed, refined	29 0 0
Olive, Spanish	39 10 0
Seal, pale	21 0 0
Cocconut, Cochin	46 0 0
Ditto, Ceylon	42 10 0
Ditto, Mauritius	42 10 0
Palm, Lagos	32 5 0
Ditto, Nut Kernel	35 0 0
Oleine	17 5 0
Sperm	30 0 0
Lubricating, U.S.	0 7 0
Petroleum, refined	0 0 6½
Tar, Stockholm	1 6 0
Ditto, Archangel	0 19 6
Linseed Oil	0 3 0
Baltic Oil	0 3 3
Turpentine	0 3 1
Putty (Genuine Linseed Oil)	0 10 0
Pure Linseed Oil	0 10 0
"Stority" Brand	0 9 0

GLASS (IN CRATES).

English Sheet Glass: 15oz.	21oz.	26oz.	32oz.
Fourths	4½d.	5½d.	6½d.
Thirds	5d.	5½d.	6½d.
Fluted Sheet	5d.	6d.	—
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Pale Copal Oak	0 10 6
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Superfine Pale Elastic Carriage	0 16 0
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Extra Fine French Oil	1 1 0
Eggshell Flattening Varnish	0 18 9
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Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 6

At a general meeting of members of the Royal Society of Painters in Water-Colours on Wednesday, Mr. D. Y. Cameron, A.R.A., was elected a member of the society.

Mr. A. G. Drury, an inspector under the Local Government Board, held an inquiry at Brampton, Cumberland, on Tuesday, with regard to an application from the rural district council for sanction to borrow £3,600 for works of water supply.

Mr. S. A. Parnwell, the newly-appointed assistant to the general manager of the Great Eastern Railway, was articulated as a surveyor to Mr. Daniel Watney, of the firm of Daniel Watney and Sons, 33, Poultry, E.C. For some time Mr. Parnwell has acted as land agent to the company, and this position he retains.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the Editor of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

. Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits, on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

NOTICE.

Bound copies of Vol. CVII. are now ready, and should be ordered early (price 12s. each, by post 12s. 9d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XL., XLVI., XLVII., XLVIII., XLIX., L., LXX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., LXXVII., LXXVIII., LXXIX., LXXX., LXXXI., LXXXII., LXXXIII., LXXXIV., LXXXV., LXXXVI., LXXXVII., LXXXVIII., LXXXIX., XC., XCI., XCII., XCIII., XCIV., XCV., XCVI., XCVII., XCVIII., XCIX., C., CI., CII., CIII., CIV., CV., CVI., and CVII. may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

Handsome Cloth Cases for binding the BUILDING NEWS, price 2s., post free 2s. 4d., can be obtained from any Newsagent, or from the Publisher, Effingham House, 1, Arundel-street, Strand, W.C.

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The charge for advertisements for "Situations Vacant" and "Partnerships" is One Shilling for Twenty-four Words, and Sixpence for every eight words after. All Situation Advertisements must be prepaid.

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Advertisements not exceeding Thirty Words, inclusive of name and address, are inserted under the heading "Situations Wanted," free of charge.

Rates for Trade Advertisements on front page, and special and other positions, can be obtained on application to the Publisher.

. Replies to advertisements can be received at the Office, Effingham House, 1, Arundel-street, Strand, W.C., free of charge. If to be forwarded under cover to advertiser, an extra charge of Sixpence is made. (See Notice at head of "Situations.")

Advertisements for the current week must reach the office not later than 3 p.m. on Thursday. Front-page advertisements and alterations or stop orders for serial advertisements must reach the office by Tuesday morning to secure attention.

RECEIVED.—W. C. Co., Ltd.—L. W.—G. and C., Ltd.—M. E. Co.—J. D. and Son.—C. D. D. and Co., Ltd.—B. O. Co., Ltd.—H. and S., Ltd.—V. de T. A. Co., Ltd.—D. and Co., Ltd.—K. G. and Co.—W. and C., Ltd.—R. I. C. and Co., Ltd.—W. O. and Son.—J. A. K. Co.—A. A.—A. and E.—B. T. B., Ltd.—T. G. S. and Co.—C. B. and Son.—B. Bros.—C. N. and Co.—A. E. S.—R. B. and Son.—D. and Co.—P. Yr. O. Q. Co., Ltd.—W. and Co.

W. D.—Yes.

PURLEY.—Thanks, no.

A. H. S.—We could use a good measured drawing.

SAK.—The matter is purely a question of account, and we cannot undertake to express an opinion whether the terms are reasonable or not. If you go to law, the Judge will, in all probability, order a reference.

The council of the South Wales Garden Cities and Town-Planning Association are at present engaged in conducting an exhaustive investigation into the trend of building costs during and after the War. The report on the subject will be published ere long, and will be of general interest.

Rifleman Andrew Warner, 1st Battalion Queen Victoria Rifles (19th London Regiment), who died on April 28 from wounds received during the storming of Hill 60, was a member of the Worshipful Company of Founders, and director of John Warner and Sons, bell-founders. His age was twenty-seven.

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TENDERS.

. Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ALDERSHOT.—For painting-work at the isolation hospital, for the Aldershot Urban District Council:—Atkins and Son (accepted) £78 11 0

ALDERSHOT.—For supply of electric-light plant, for the urban district council:—Parsons (accepted) £1,793 0 0

BLAIRHALL.—For drainage work at Blairhall, for the Dumfrieshire District Committee:—Flaherty, F., Falkirk (accepted) £3,072 0 0

BRENTFORD.—For 280 cubic yards of Jin. Guernsey granite chippings, for the Brentford Urban District Council. Mr. J. W. Croxford, surveyor:—Mowlem, J., and Co., Ltd., Grosvenor Wharf, S.W. 17s. unloaded on wharf, 15s. 9d. in barge alongside (accepted).

CROYDON.—For the supply of screens and hopper dredgers for the new works on the farm at South Norwood, for the Croydon Town Council:—S. S. Stott, and Co. (with manganese steel chains) £770 0 0

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Ames Crosta, Ltd. 510 0 0

Waller, G., and Son (accepted) 462 0 0

Adams Hydraulics, Ltd. 297 4 0

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Masons' work:—Ellis, P., Dewsbury.

Carpenters' and joiners' work:—Armitage, S., and Sons, Dewsbury.

Iron and steel work:—Newsome, Askeham and Co., Batley.

Patent Glaziers' Work:—Standard Patent Glazing Co., Ltd., Dewsbury.

Slaters' work:—Thompson, W. R., and Co., Ltd., Dewsbury.

Plumber and gasfitters' work:—Mitchell, F. and T., Dewsbury.

Painters' work:—Ramsden, N., Dewsbury.

DUNDALK.—For (a) painting the external wood and ironwork of the workhouse and recoloring the interior of the fever hospital; (b) painting the chimney shafts, plastering the upper female infirm ward, and sheeting the female infirm wards and the dining room, for the guardians:—

Contract A.

Coyle, F. 181 10 0

Rice, P. (accepted) 169 0 0

Contract B

O'Callaghan, E. 120 0 0

Duffy, B. 117 0 0

Bennett, M. (accepted) 90 0 0

(All of Dundalk.)

GILFACH GOCH, GLAM.—For the erection of a new school for 488 scholars at Hendreforgan, for the Glamorgan County Council. Mr. D. Pugh-Jones

F.S.I., Cardiff, county architect:—

Beames and Makin, Violet-row, Cardiff 4,924 1 8

GILFACH GOCH, GLAM.—For the erection of a new school for 350 boys at Evanstown, for the Glamorgan County Council. Mr. D. Pugh-Jones, F.S.I., Cardiff county architect:—

Beames and Makin, Violet-row, Cardiff (accepted) £5,064 0 0

GREENWICH.—For the supply and laying of cables required in connection with an additional temporary supply of power up to 3,500 k.w. to be obtained from the London Electric Supply Corporation, for the London County Council:—

Callender's Cable and Construction Co., Ltd., Hamilton House, E.C. 6 26,833 2 6

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Henley's, W. T., Telegraph Works, Ltd., Blount-st., E.C. 6,407 13 4

British Insulated and Helsby Cables, Ltd., Prescott 6,293 0 0

Western Electric Co., Ltd., North Woolwich (accepted) 6,214 0 0

Estimate of the chief officer of tramways, £6,214.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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OUR ILLUSTRATIONS.

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New Town Hall and Market Buildings for the Borough of Denbigh. View and plans. Selected Design. Messrs. John Brooke and Elcock, Architects.

Nairobi Cathedral, East Africa. View and plan. Mr. Temple Moore, F.R.I.B.A., Architect.

St. Michael's Church, Loughor, near Swansea. View and plan. Mr. W. D. Caroe, M.A., F.S.A., F.R.I.B.A., Architect.

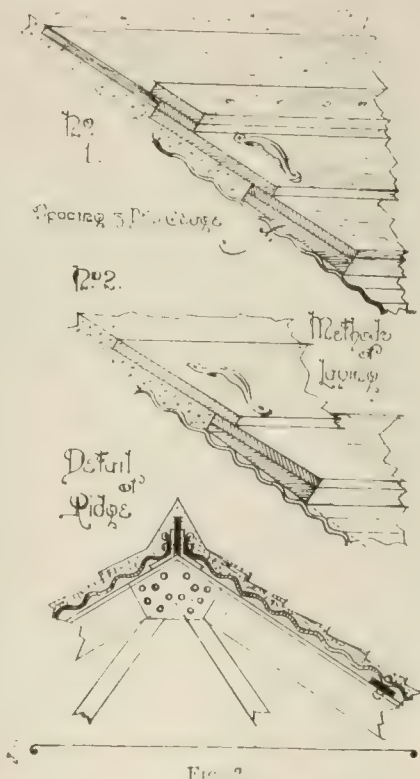
Municipal Buildings, Gourock. Selected Design. Elevations, section, and plans. Mr. Alexander N. Paterson, M.A., A.R.S.A., F.R.I.B.A., Architect.

Fireproof Constructional Work in New Methods of Reinforcement.

FIREPROOF STRUCTURAL WORK IN NEW METHODS OF REINFORCEMENT.

It is a wonder, with the advance made in reinforced fireproof construction, that little or no attention has been given to fireproofing roofs entirely. Even when structures are otherwise fireproof throughout, it is not always desirable to cover them with a flat of steel and concrete construction. Therefore, many otherwise up-to-date buildings in various fireproof materials are still finished with the customary form of wood roof. These may possibly be carried on steel principals, with steel angles for the purlins. The latter, with wooden rafters, fillets, and boarding-over, are, more often, still the chief form of construction. A good many buildings which catch fire do so in the upper portions or on the top story entirely. The lack of recognition of this is hardly due to a dearth of materials or lack of adaptability. There is a comparatively inexpensive yet valuable material available—viz., galvanised corrugated iron. There are many strong points in favour of the adoption of this material, the most noteworthy being its non-corrosive qualities. A material which is used complete in continuous sheets, such

U clips, as illustrated in detail on the same figure. The latter are best used together, both types, turned inside and outside alternately. The reason for this should be



quite apparent to the constructionist, forming a more secure coupling in event of any vibrational effects. The steel ridging-piece, with the angles to same, is shown in detail on Fig. 2. Also, a method of laying the concrete, to obtain equally-spaced drips of the same depth, after the manner of tiling, etc. Half, three-quarter, or inch drips might be given as preferred, for concrete 1½ in. to 2½ in. thick in the deepest part. The spacing drip-gauge might be constructed either in one or two pieces, as shown. Feathering is involved to obtain the correct angle for the concrete, which, of course, differentiates from that of the roof itself. The top course is first carefully laid, and then covered with a plain board; the spacing-gauge is then shifted down a course, when the space left is filled with concrete and quickly modelled up with the sliding modelling-board. The latter is manipulated by being drawn backwards and forwards with handles placed at each end. This modelling length, or template, would in all probability prove more efficacious if made in thin metal.

This could easily be bent to the L angle required for the purpose. The laying of the concrete might sometimes be managed in a somewhat more rough-and-ready manner with a single board, as shown in Fig. 2, if necessary. This method, however, would not really prove so quick in execution or so accurate, as that shown in Fig. 1. Under ordinary circumstances, on a low-pitched roof, the concrete would doubtless stand all right with the key formed by stout galvanised-wire ends, and that afforded to some extent by the corrugations. In very exposed situations, or when a roof assumes a steeper angle than 30 deg., it should then have attached a few long and narrow lengths of expanded metal; this can be done by either of the methods previously illustrated. The lengths should be arranged, breaking joint, as shown on Fig. 3. Such a roof would have a very good appearance, and when formed with the deeper drips would produce the same effect as stone, or the heavy slate slab roofs of picturesque appearance. It could also be vertically lined, in furtherance of this effect, by slight impression from a V-edged board at regular or irregular intervals. The latter is really required to break what would otherwise prove monotonous lines, when presented in long, unbroken lengths. An excellent concrete could be formed for this purpose by fine-screened, grey, red, green, or other coloured granite chippings used as the

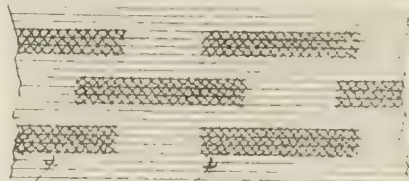


FIG. 3.

ballast. A certain proportion of ground brick might also be incorporated with the red variety, thus giving a little more colour, which would have much the appearance of tilework. It could also be tinted some of the rarer tones of Westmoreland slates, etc., in the same manner as used for elevation plasterwork. Properly manipulated, such a concrete roof might be made quite as effective as some of the best in those materials. The inside of such a roof, either whitewashed or painted white, with the remainder of the ironwork, would have quite a neat appearance for many purposes. If preferred, expanded metal can be attached to the inside and plastered, or a flat ceiling slung on to the bottom ties in the same material. In the latter case, a better key can be formed for the plaster by cross interlacing with ½ in. hoop-iron.

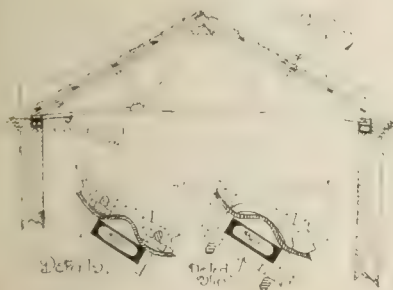


FIG. 1.

as corrugated iron, is also far sounder constructionally, and in many respects less costly. Moreover, as used for floor-work, it naturally forms its own permanent centring and reinforcement at the same time. This is illustrated in Fig. 1. It consists of the ordinary steel L principals—about 8 ft. or 10 ft. apart, with flat bar or small L or T purlins, to carry the galvanised corrugated iron. This can be secured to the bars with two or three strands of stout galvanised iron, about every foot or eighteen inches, twisted tight, and turned up and down respectively, when it forms a good key for the top dressing of concrete as well. It is preferably secured in a firmer manner by

through medium-mesh expanded metal. This is more clearly shown in Fig. 4. The ends of the hoop-iron are lapped outwards, thus affording a further slight key for the plaster. The same system can be readily adapted for curved, vaulted, or semicircular work inside, as illustrated by

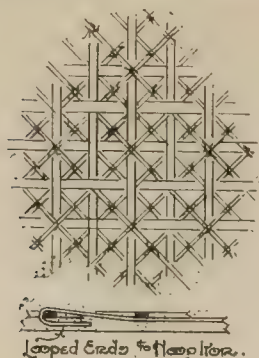


FIG. 4.

Fig. 5, such as might be adopted for halls, chapels, etc. In this case, the ceiling is slung on to the various spandrel-plates, which form the semicircular ground; these are also designed to form the chief support to the roof, instead of the customary type of principal.

The inside lining of corrugated iron might be dispensed with, and the expanded metal slung directly on instead, if preferred. The latter could be readily worked round the curve in strips, and finished with the metal lathing for plastering. The top of expanded metal—or corrugated iron—in ceiling work might further be covered with felt where desirable, forming both a sound and atmospheric insulator. The felt for such purposes might be chemically treated to render it fireproof.

There is no radical reason for assuming that such a roof would suffer any undue deterioration. Anything of this nature would merely be on a par with that which occurs in the ordinary slate, tile, or slab roof after more or less lengthy periods. At the same time, any slight repairs of such a character could be more easily, and, therefore, more cheaply, effected than the latter types of roofing. The probability is that it

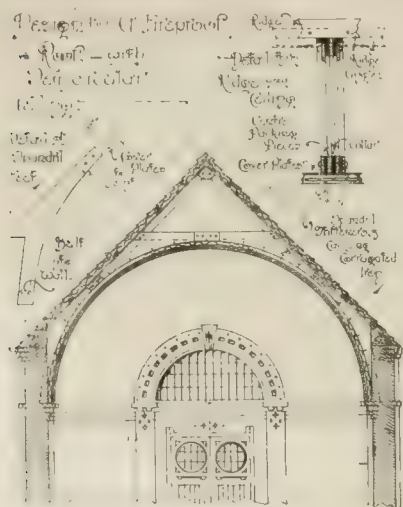


FIG. 5.

would last far longer than these without such attention proving necessary. One of the chief reasons for slate and tile giving way is due to wind pressure, springing, and breaking by gradually lifting under the edges. With the new type illustrated, these reasons are non-existent. As with all new inventions, some extended use is first

necessary to ascertain the exact weathering capacity.

The application of galvanised iron to floors is shown by Fig. 6. It is best introduced as shown by No. 1 on this sheet, with a strip of expanded metal secured to the top by either of the fixing methods previously illustrated and described. The lengths of expanded metal in this position form a much better tie with the concrete, strengthening the whole considerably. It would be possible to use galvanised iron in this manner from bearings of 18 in. up to 3 ft.—or even 4 ft.—possibly even more where light floors can be provided, in consequence of light loads only being allowed for. No 2 on this figure illustrates the method quite clearly. The ends of the galvanised iron should be well turned up into the concrete, about 8 in. or 9 in., as shown. The latter system, with the metal fluting left exposed, would be quite suitable for a great deal of work. Flat ceilings can also be slung on in the customary manner, as shown by the lower section,

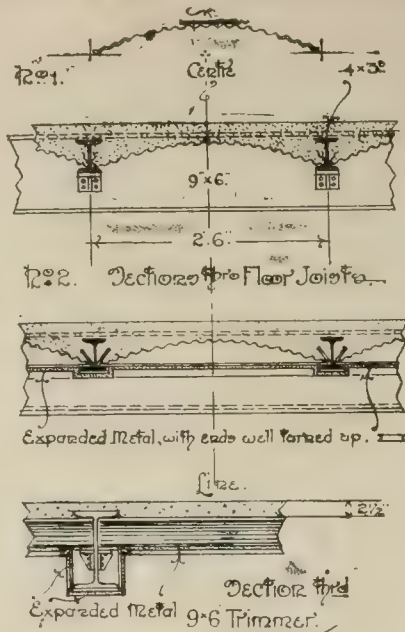


FIG. 6.

where preferable. The latter would be formed of expanded metal and hoop-iron lathing, as previously described. With this method, the expanded metal should be well turned up into the concrete, and the galvanised iron ends well doubled up to form a stouter end-bearing, as shown by Fig. 7. This figure also indicates another method of further reinforcement by means of double sheeting, with quadrupled ends, well turned up. This would form a most excellent method for further strengthening a floor. It would prove of great value when it is desirable to keep floors down very shallow, as it also admits of lengthening the bearings considerably where merely average light or medium loads have to be allowed for. This method of forming a floor, with hollows between the ceiling and galvanised iron, also possesses the quality of being largely soundproof. It is rather a pity that expanded metal is not supplied in galvanised iron for ceiling work, and galvanised steel for other positions, where greater strength is a desideratum. Metal lathing, in the same material, would also be preferable for ceiling work. The latter could be easily supplied with roughed perforations, etc., when it would meet a long-felt want. The chief drawback in dealing with metalwork for plastering purposes is its lack of proper key, which makes the working more difficult for the plasterer, thus taking longer.

Possibly we may have something of the character indicated introduced before long. Floors of the type illustrated would carry a considerable weight on the metal alone, before the concrete is added. A series of

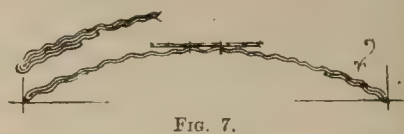


FIG. 7.

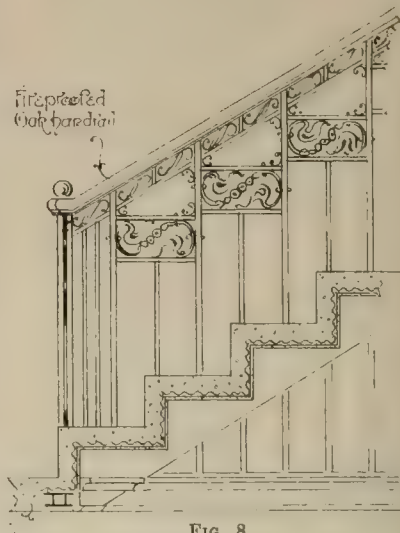


FIG. 8.

tests in this direction, and also with the complete floor, when finished in concrete, would prove both valuable and interesting. This could be easily arranged by many firms with the necessary convenience and materials at their disposal.

STAIRS.

This is also another use to which the same material could be satisfactorily adapted: that, too, in a really good and very economical manner. Fig. 8 shows it so applied. The surface-coating of concrete

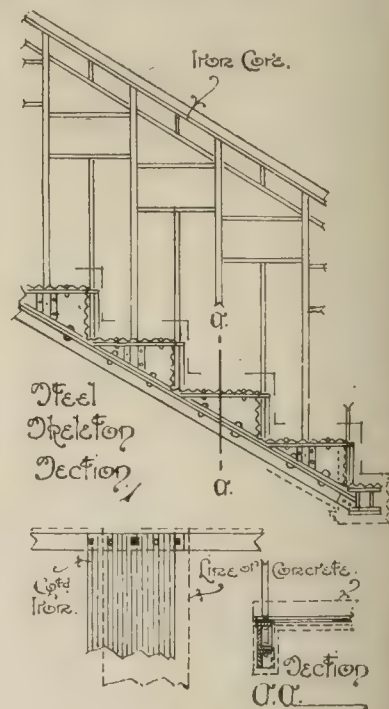


FIG. 9.

is here shown, of equal thickness for treads and risers. For the latter, though, this is not really essential: they might very well be about half the thickness of the treads, thus lightening the whole considerably. The risers are preferably covered with a

strip of expanded metal on the iron face, to form a good key, further strengthening the whole. A top strip might also be added to the treads with advantage, where it is desirable to tie the whole together very thoroughly. For work of this description, the thickness of the concrete need not necessarily exceed more than 2in. or 2½in. at the outside for the treads, whilst risers

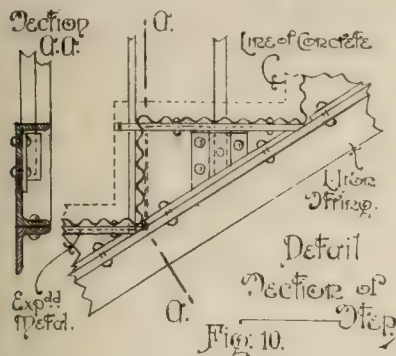


Fig. 10.

about 1½in. would prove quite sufficient in good compo. for most positions. Constructed with a good proportion of cement, thoroughly clean, well-washed, sharp sand, and a little fine-sifted granite chippings as ballast, quite a strong and durable staircase might be formed in very light scantlings for this class of work. The same system also admits of finishing with tiles, mosaic, or marble slips, of 1in. or 2in. in thickness, placed on a thin trowelled bed of good material. The constructive steel skeleton section is illustrated by Fig. 9. The strings, in many instances, would doubtless be best formed by an angle L, as shown, the flanged spandrel pieces forming the bearings for steps being either bolted or riveted on. The bottom flange of the step-spandrels, of course, follows the angle of the staircase, and would be the same width as the L string. The upper flange—bent over straight to carry the galvanised iron—might be about double the width of the lower one with advantage. The galvanised iron is best slightly hammered out at the ends, and turned over once or twice, thus giving a stronger bearing. It might be either bolted through and secured with nuts, or riveted on. It would also be further secured by the balusters dropping

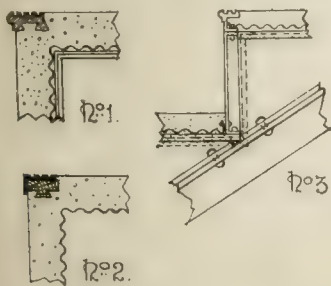


Fig. 11.

through same, and the flange of spandrel-pieces. The middle ½in. balusters fit into plain socket-pieces, bolted or riveted to the spandrel-ends. The balusters themselves could either be secured right through with a pin and nut, or simply with the customary stout metal screw so often used for metal-work of many descriptions. In all probability the former method would prove no more expensive in quantities; it certainly forms the strongest and most satisfactory one for secure fixing. The enlarged detail, Fig. 10, shows the construction of strings, spandrels, and steps. It should prove necessary to further reinforce the treads, when the staircase is likely to be subjected to heavy or ex-

ceptionally heavy traffic, this can readily be done by introducing one or two bars underneath the galvanised iron, resting on the flanges. Such bars would of course be preferable in galvanised steel. The underside of the stairs can be covered with expanded metal and metal lathing for plastering, as shown, to follow the line of the steps. If preferred, a straight soffit, following the angle of the staircase in the customary manner, could easily be arranged. Another method of forming the strings, which would really prove the strongest and most satisfactory from a purely constructional point of view, would be to cut same entirely out of the sheet-metal. This might vary from 3-16in. to ½in. in thickness or so, according to the lengths of spans and the average weights to be allowed for traffic, from the nature of the general structure, etc. Such solid strings could be bent round at right angles at the ends, and so arranged as to flange directly on to the steel trimmers of the landings at the top and bottom, being secured to these with bolts or rivets. Or they could be housed into U-shaped pieces, flanged to the trimmers, and secured in a similar manner. With the latter type of string it would be quite possible to execute wreathed work, with properly-arranged steel trimming joists well tailed into the walls at the various landings and turns. There would be no difficulty in bending a very long length of steel to the correct

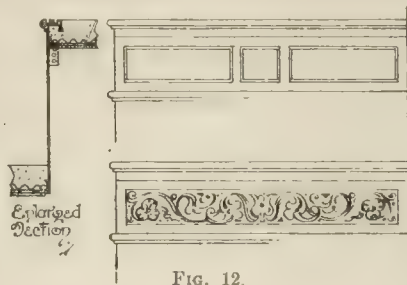


Fig. 12.

angles for this purpose. The only really weak point with concrete steps is their liability to chip on the angle or nosing. This difficulty can be overcome by adopting either of the methods illustrated on Fig. 11. No. 1 on this sheet shows the customary corrugated or channelled metal nosing. This can be provided with splayed anchor-tail pieces, about 6in. long, and 6in. apart, thus forming a good joint in the concrete. The better method of this type is to use a hardwood fireproofed strip, as shown by No. 2 on the same figure. This is provided with a splayed anchor piece at the bottom. The latter method admits of covering with thin, channelled, roughed, or corrugated brass, lead, or, better still, rubber, for giving the best grip on the edge. Either of these materials can be fixed with small screws, and narrow plates for the rubber, about ½in. long, between the channels or corrugations. These have the advantage of being easily renewed from time to time as necessary. No. 3 illustrates a method of finishing the risers with a thin metal plate about 1-16in. in thickness. This merely requires a very thin coat of concrete or plaster at the back. There is really no reason why the concrete and plaster should not be dispensed with entirely in the latter position, if preferred, when it could be constructed as shown by Fig. 12. The wood strip, with its metal or rubber covering, as illustrated in the preceding figure, could, of course, be substituted as a nosing piece, if preferred, instead of the special steel one shown. Such risers could either be stamped in plain panelling or some ornamental relief as suggested by the elevational sketch. This method would

have a pretty good appearance on the inside face, as well as the outer one. Risers could also be formed of open grill panels, set in a metal frame. These would often prove an additional convenience for ventilation and lighting purposes, in many positions. Prismatic lights, in metal frames, could also

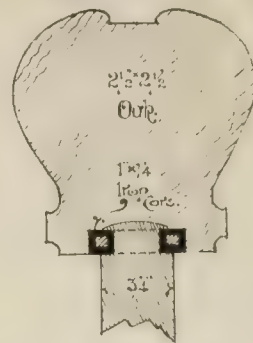


Fig. 13.

be fixed for the latter purpose. The staircase illustrated is provided with ½in. central balusters and ¼in. intermediate ones on the front of each step; the cross-work between and the longitudinal bars being also in ½in. work. A 1in. by ½in. iron top core is shown for letting into the oak handrail, to which the latter is secured by countersunk screws between the balusters. A detail of the handrail is shown on Fig. 13; it is, of course, preferable in fireproof wood.

The same method is also admirably adapted for general structural work, and walling in particular. This is applicable for a great many types of buildings, such as factories, warehouses, workshops, laundries, etc., or even bungalows. Also small

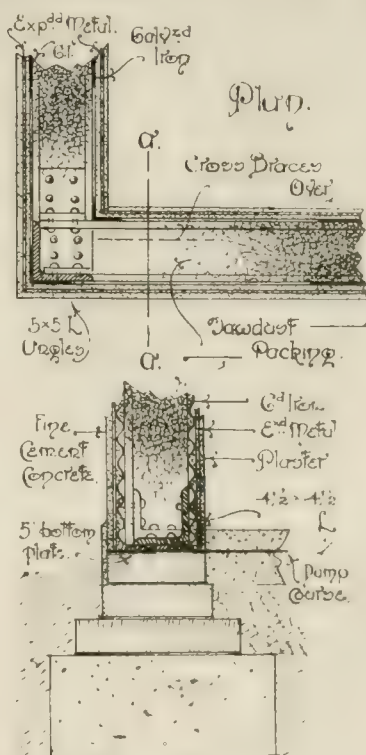


Fig. 14.

and medium class residential work. A very useful form is that shown by Fig. 11, either for single- or two-story structures, where there is no particularly heavy load on the upper floor. It is simply constructed with L angles at the corners. For the sake of illustration, these are shown 5in. by 5in.

The bottom plates are formed with 4½ in. angles on a 5 in. bottom plate, which takes the corner angles and also the intermediates as stanchions. The latter would also be 5 in. by 5 in., where they might prove necessary. Cross-braces, in flat bar-work, about 3 in. by ½ in., might also be introduced where necessary, of the constructive type illustrated by Fig. 16. This skeleton framework is then covered inside and out with

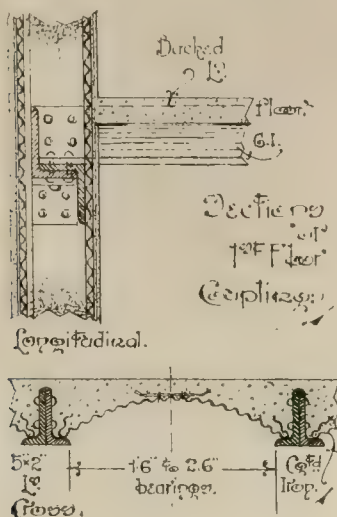


Fig. 15.

sheets of galvanised corrugated iron and strips of expanded metal. The latter might be placed 2 in. or 3 in. apart, after the style illustrated previously in Fig. 3. The outer coating of fine cement concrete need only be about 1½ in. to 2 in. thick, in the thickest part, between the corrugations. Whilst the inner coating and plaster need only be just sufficient to well cover the expanded metal, about ½ in. to 1 in. The inside, if left hollow, would form a fairly good non-conductor, both as regards atmospheric changes and sound. It would be preferable, however, lightly packed with fine sawdust, chemically treated, to render same fireproof. Walling of this description, well bolted or riveted together, would prove practically as strong, if not stronger, than the average 9 in. brick wall. Its thickness, at the same time, would only

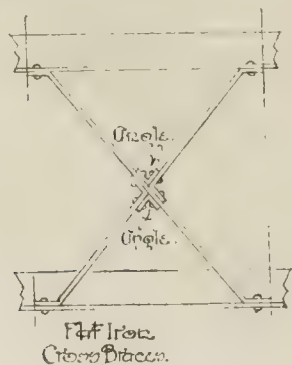


Fig. 16.

average from 7½ in. to 8 in. Packed with sawdust, as shown, it would form a far better atmospheric insulator than either brick or solid concrete. Fig. 15 illustrates a good method of coupling for a light upper floor, by means of a couple of intertwined, reversed L's between the angles and stanchions. Light-backed L's are used for the floor bearings, as shown by the cross section on the same figure. In some instances it might prove necessary to further carry the floors on a central R.S.J. trimmer, when a similar section would be required in the wall, as a stanchion. A

centre-plate between the backed floor L's would also prove necessary for rather wide bearings. These, however, with the thicknesses of the metal, are points only determinable by the actual sizes and nature of various structures with the consequent weights to be allowed for. Such would, of course, differentiate considerably, according to the type of building. The same system of construction is thoroughly practicable throughout, and quite applicable for far larger buildings of several stories. In such cases as the latter, they would require carrying on steel H stanchions, floor-joists, etc., generally, in the customary type of built-up steelwork. The main methods of construction and finishing, however, would remain the same as those described and illustrated. Without doubt, they would prove of the greatest value for building purposes in general.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The fortnightly ordinary meeting of the Royal Institute of British Architects was held at 9, Conduit-street, W., on Monday evening, the chair being occupied by the President, Mr. Ernest Newton, A.R.A.

The Hon. Secretary, Mr. E. Guy Dawber, said the sad news had already been made known of the death of a young Associate of the Institute, Mr. Albert Edward Lowes, who was serving in the Army Service Corps attached to the 6th Northumberland Fusiliers, and was killed while carrying out his duties in the action near Saint-Julien on April 26. It was with deep regret that he had to announce that another young Associate, Captain George Edward Hunter, also of the 6th Northumberland Fusiliers, lost his life in the same action, together with his younger brother, Captain Howard Tomalin Hunter. These young officers, whose lives had so cruelly been cut short, were the only sons of Mr. and Mrs. Edward Hunter, of Wentworth, Gosforth. A brother officer, writing of the Associate member, said: "He led his men with great courage and a total disregard for himself. He was right in front of the enemy's position, and was killed by a shell fired at short range." The sad news had also just arrived of the death of William Leonard Boghurst Leech, who was only elected an Associate so recently as last December. Mr. Leech, a member of the 1st Battalion, Queen Victoria's Rifles, was wounded in the fight for Hill 60, was invalided home, and died at the Emergency Hospital, Westcliffe-on-Sea, last Friday. He would move that the regrets of the Institute for the loss of these brave young men who had given their lives for the country, be entered on the minutes, and that a message of sympathy and condolence be conveyed to their relatives.

The members present signified assent by silently rising to their feet.

Mr. Guy Dawber added that he had also to announce the decease of Mr. William Henry Spaul, of Oswestry, Fellow, who lost his life in a street accident, at the age of seventy-five; of William Thomas Grewcock, of Leicester, Associate; Daniel Powell, Lord-street, Liverpool, Licentiate; and John Joseph Seanor, Cross-street, Manchester, Licentiate.

THE EVOLUTION OF THE ARCHITECTURAL COMPETITION.

A paper on this subject, illustrated by a few lantern-slides, shown at the close of the address, was read by Mr. H. Vaughan Lanchester, Vice-President. The author expressed decided views as to the beneficial influence of the competition system on design, and proceeded to sketch the historical development of the method, closing with some remarks on the special advantages and difficulties the competitive mode presents. He had been unable to find any definite record of an architectural competition in ancient Greece or Rome, but the principle was so familiar to those peoples, that he

should be greatly surprised if none such took place. Medieval competitions arose under rather favourable circumstances, as the members of the Guild were naturally accepted as qualified to adjudicate. In the case of Siena Cathedral, a council of monks, with masters of the Guild, met on July 17, 1357, to choose between two designs of columns and a chapel made by Francesco Talenti and Orcagna, when each candidate elected two masters as arbiters. Francesco Talenti chose Ambrogio Lenzi, a Lombard, and Frate Filippo Riniero, of S. Croce. Andrea Orcagna chose Niccolò di Beltramo, also a Lombard, and Francesco di Neri. These could not decide, and Piero di Migliore, the goldsmith, was taken as umpire, the parties binding themselves to abide by his decision. Giovanni di Lapo Ghino and Francesco Talenti were ordered to make new designs. At length, on July 28, Orcagna's plan was chosen. When we came to the competition, in 1418, for the dome of the Cathedral at Florence, we found that Brunellesco, who ultimately proved to be the ablest architect, was outside the brotherhood. Any artist whatever who had made a model of the projected cupola was to produce it, the model accepted to have a prize of 200 gold florins. After several postponements a number of models were sent in, the competitors being Magister Giovanni di Ambrogio, Manno di Benincasa, Matteo di Leonardo, Vito da Pisa, Lorenzo Ghiberti; Piero d'Antonio, nicknamed Fannulla (do nothing), Piero di Santa Maria in Monte, masters in wood. There were several models by members of the civic company of stone-cutters, and last, not least, a model in brick and mortar without scaffolding, made by Brunellesco, Donatello, and Nanni di Banco. This last won the prize, but the Arte dei Maestri had not, evidently, faith enough in one outside their ranks to commence at once with the building. The story of Brunellesco's restiveness at his old rival, Ghiberti, being associated with him in carrying out a design peculiarly his own, and how he tried to throw scorn on him by locking up his plans and feigning illness, thus leaving Ghiberti to work in the dark, was too well-known to need repetition. Brunellesco's strike for independence appears to have given the death-blow to the great Masonic Guild, which dropped out as a body controlling competitions, and for a long period such decisions as were made came ostensibly from the laymen interested, or, in modern terms, the promoters. Though numerous designs were prepared for St. Peter's, at Rome, and though some of these were still under consideration when another was demanded, the circumstances hardly justified us in regarding them as competitive. We came nearer to the idea of a competition in the case of the Louvre, where, at one stage, a selection could have been made from a number of designs. Among the submitted schemes were François Mansart, Jean Marot, and Pierre Cottart. Another competitor was Claude Perrault, who had made a study of architecture. "Mansart might have been selected, but his refusal to make a final choice among the alternatives he had submitted at Colbert's request led to his rejection. The criticisms on the remainder proved inconclusive, and intrigues in favour of this or that competitor were rife. Colbert sent the drawings to Poussin, to obtain the opinion of the Roman Academy. They thus came under the eye of Bernini, who condemned them all. The Cavaliere Giovanni Lorenzo Bernini (1598-1680), then at the zenith of his fame, was," says Mr. W. H. Ward, "the chief exponent of the Barocco school, and was considered the first architectural authority in the world. It was decided to invite him to Paris, to give his advice on the spot. Received in France with almost Royal honours, he soon produced a new scheme, which he attributed to divine inspiration (1665). The foundation-stone was laid by the King with great pomp, but the design was not really approved by anyone in France, and it soon became evident that it would not be carried out. Bernini returned home the same year in high dudgeon, but royally paid, leaving the field clear for the Frenchmen. The King was induced to believe

that he preferred a fresh design prepared by Claude Perrault; and this, with minor alterations, was carried out (1667-80), though the work remained under the charge of Le Vau, and, later, of d'Orbay. Such, briefly, was the course of events which led to the erection of the world-famed Colonnade of the Louvre." The 18th century saw a better-organised competitive proposal—namely, that for a monument to Louis XV. In June, 1748, M. de Turnebam, then his Majesty's director of building, invited the architects of the Academy to prepare schemes for the site of such a monument in the quarter of Paris that appeared to the competitor the most suitable. Not only the Royal architects, but also several other artists, seized the opportunity to show their zeal and their talent. The King, having selected an open area between the Tuileries and the Champs-Élysées, a fresh competition was initiated. Several of the designs had special advantages, and M. Gabriel was directed to combine these, in order to include them all in the executed work. Thus was determined the design of the Place de Louis XV., now the Place de la Concorde. In the 18th century the number of architects in the British Isles was not a large one, and competitions were usually limited to a few. The fourth decade of the 19th century witnessed three important competitions. The first was that for the Houses of Parliament. Ninety-seven designs were submitted to four Commissioners, who on February 29, 1836, unanimously selected that by Charles Barry as the best. For St. George's Hall, Liverpool, there were eighty-six competitors, among whom H. L. Elmes was successful, subsequently winning the Assize Courts competition in 1841. The two buildings were combined, and carried out during the succeeding ten years. The third was that for the Royal Exchange. Robert Smirke, Joseph Gwilt, and Philip Hardwick being the assessors. The first premium was awarded to William Grellier, the second to A. de Chateaufort and Arthur Mee, and the third to Sydney Smirke. Designs by T. L. Donaldson, Richardson, and David Mocatta were recommended, but were considered to exceed the stipulated cost of £150,000. None of these designs was, however, carried out. On September 30, 1856, the Commissioners of Her Majesty's Works and Public Buildings invited three designs from architects of all countries—the first to comprise a scheme for the concentration of the principal Government offices on a site lying between Whitehall and the New Palace at Westminster; the other two, designs for buildings which it was determined to erect forthwith as parts of such scheme. One of these was to be a Foreign Office, the other a War Office. The designs awarded the prizes, the premiums, thirteen in all, were paid, but none of the submitted designs (which remained the property of the Office of Works) were executed. The obvious defect in the inception of this group of competitions was the simultaneous issue of programmes for a general scheme, and for two buildings that could form part of this. We can hardly be surprised that it ended in a muddle, and left an impression adverse to the competition system. In 1864 a competition was held for Museum Buildings on the site now occupied by the Natural History Museum. Captain Hawke gained the first premium, Professor Barr the second, and Mr. Cuthbert Brodick the third. Complaints were made as to the drafting of the conditions, which divided the site into two equal halves, and left it very vague as to how far the western half could be used for the accommodation scheduled. The competition for the Law Courts, in 1866 and 1867, was conducted by a Commission in whose concurrence seven eminent men were appointed as judges, two architects, John Shaw and George Pownall, being afterwards added. As might be imagined, though the designs submitted were only ten in number, the affair got into a desperate tangle. A report on ninety-nine various points of detail, based on the views of heads of departments and other authorities, showed that every competitor scored some-

where. This might in itself be regarded as a sufficient proof of the futility of this method of analysis; but if a further one were needed, an inspection of the mass of reports and investigations resulting would more than suffice. There was never a more conscientious and painstaking jury; but the value of their work was neutralised by an almost complete ignorance of the technique of design. The ultimate results were so inconclusive and confused that everyone concerned must have been relieved when the great beauties of detail in G. E. Street's design were made clear, and a justification was found for awarding him the work. The competition for the Paris Opera House took place in 1860, under the auspices of a jury. Five prizes were awarded: First, Jinnain; second, Crepinet and Botrel; third, Garnaud; fourth, Duc; and fifth, Garnier. No design was considered quite satisfactory, and a second competition between the preselected competitors was advised. As the result of this, M. Garnier was, in 1861, commissioned to carry out the building. In 1882 an open competition for the construction of the Sorbonne was held, with a jury of eighteen members. M. H. P. Nenot won this competition with a brilliant design. The competition for the two palaces of the 1900 Exhibition at Paris took place in 1896. The jury numbered no fewer than forty-seven members. Five premiums were awarded in each case. Owing to the amount of work to be done in a short time, the Grand Palais was entrusted to the architects placed first, second, and third, with M. Girault, who was placed fourth, as architect-in-chief. M. Girault also secured first place, and carried out the Petit Palais. One of the earliest undertakings of the Royal Institute of British Architects was the appointment, in January, 1839, of a committee to consider public competitions. It reported favourably on the system, but suggested that it lent itself to collusion. "Many instances have been amply proved to your committee." It struck the right note in asserting that whatever the conditions, they ought to be clear and explicit, and all definite instructions ought to be strictly adhered to. "The formation of the programme, upon which competitors are required to frame their designs, becomes, therefore, the first essential point for consideration, and a deficiency on this point is, perhaps, the most general evil in the present system." In a pamphlet written in 1861 the late M. César Daly dealt with competitions for public monuments, the latter term, of course, including all important public buildings. He took the view that competition is vital to architectural progress, and regarded the nomination of the jury (whom, he suggested, should number thirteen) as the greatest technical difficulty in a competition, on account of the demand that all schools of thought should be represented, and the difficulty that these had in finding a common ground on which a logical decision might be based. In 1908 the R.I.B.A. appointed a Special Committee on the Jury System of Assessing Competitions, which issued, on November 10 of that year, a report now well known, making seven recommendations, including that of a jury of three for competitions exceeding £100,000 in estimated outlay, an assessor and two architects on those for works to cost between £30,000 and £100,000, and an assessor for all other competitions. The scale of assessors' fees was mooted, and the Competitions Committee took the pains to prepare a list of assessors for the assistance of the President, such list to be revised from time to time at least annually. A minority report in the following terms was appended, which declared that the present dissatisfaction is due less to the existing methods of assessing than to the lack of any defined and recognised standard as to the qualities that should distinguish a fine building, and that in default of such a standard, no system of assessing would do more than mitigate the evil. They further suggested that the office of assessor should be regarded as one of distinction rather than of profit, and that architects should be prepared to assess in an honorary

capacity, if circumstances demanded it. Mr. Lanchester remarked that these sketch outlines of the history of architectural competitions rendered it clear that knowledge had usually been very much in advance of practice. Two reasons might be adduced for this. The first was the lack of a systematic training in the profession as to what the essentials of architecture were; and, secondly, the necessity for compromise in dealing with promoters, who often only partially understood the real purposes of a competition, and, even when they did, were technically inexperienced in the methods best suited to achieve these. When recommendations were put lucidly to promoters from a clear, logical standpoint, he believed that, in most cases, they would accept advice so supported. The responsibility for seeing that they receive this rested with the architects, and more important competitions have fallen short of the standard they might have reached by architects' own default than by reason of any intentional malpractice on the part of promoters. The lecturer held that from the very outset the professional men who adjudicated in a competition should advise the promoters. The idea that everything must be in shape before the assessor or assessors were appointed was, he contended, utterly wrong, and had been responsible for the comparative failure of many a competition. On the architect's side, this responsibility had not received much more definite recognition than with the promoters. Assessors had often failed to realise that they ought to give the same meticulous consideration to the various aspects of the proposition as they would in the case of a building they were invited to carry out themselves. It was their duty to see that the interests of the promoters suffered in no way through the successful competitor not having been in personal touch with them from the beginning, and assessors could best realise this requirement by regarding themselves as representing the unknown competitor who would ultimately take up and continue their work. Continuity from start to finish, such as was found in non-competitive work, was the great need in competition practice. At present, there was a tendency to cut it up into three distinct stages, greatly to the detriment of the result—the first stage before the appointment of the assessor, or jury, the second during their appointment, and the third after the selection of the design. To put competitive practice on a sound basis, the breaks between these stages should be bridged over, and he ventured to suggest a procedure by means of which this might be achieved. Let them assume that some public body was promoting a competition, and had appointed a building committee. After some preliminary discussion, they would ask for the appointment of an architectural adviser, and depute two well-qualified members to confer with him. These three would draw up the programme. Before issuing this, two other independent architects would be added to form a jury of five, and on the programme having been agreed by them, it would be issued to competitors. The usual stages of questions, replies, and receipts of designs having been passed through under the supervision of this jury, its members would jointly make their award, dealing very fully with all the considerations necessary to inform the successful competitor as to any fresh aspect that had occurred to them during the adjudication. Their award might be in two parts, one for publication, and the other more of a confidential communication to the selected architect, in order to make him conversant with problems and difficulties that may affect the further development of his design. Turning now to the assessors, he would point out that a good architect was not necessarily a good assessor. The less imaginative man with a better training in technique might be superior as a judge to the greater artist, who was, perhaps, unable to analyse the operations of his own mind. The same intuition that enabled an architect devoid of the analytical faculty to produce a brilliant design might empower him to select the

ablest one submitted in a competition. That was not the weak spot in his equipment as an assessor. This would be discovered in the earlier stages, such as discussions with the promoters and the preparation of the programme. To place the issues properly before a clear-headed business or professional man whose experience was outside the technique of art demanded a faculty of logical exposition, and an experience of the difficulties involved, which were not essential concomitants of imaginative force. The "legal and logical mind" was useless without artistic ability; but artistic ability was equally useless in this case if its methods were intuitive. In order that vital fluctuations in our art should receive due appreciation, it was desirable that the adjudication of competitive designs should not be entirely in the hands of the older and more experienced men, whose sympathies were liable to incline towards the earlier as against the newer methods. At the same time, experience and mature judgment were invaluable, so that one of the chief recommendations of the jury system was the facility it afforded for securing both the experience of the elder and the fresher point of view of the younger men. Finally, they came to the competitor who, when he had decided to compete, sat down to master the programme, or conditions. From the competitor's point of view, the best programme was one that stated clearly what was wanted, but made no attempt to indicate how these wants were to be provided for. As a rule, the allocation of the relative positions for the accommodation asked for was a mistake, tending to hamper freedom in the conception of the design. If special requirements had to be met, it was better that these should be thoroughly explained than an attempt made to anticipate the competitor's work by specifying some definite arrangement. Having mastered the programme to the best of his ability, the competitor then turned his mind to its solution. In order to do this, he must have formed a conception as to what was the dominating factor of the problem. Then he proceeded to the demands next in order of importance, and the attempt must be made to reconcile these with that placed first. Somewhere about this stage the competitor would have had to form an idea of the general massing of his building, and of the subdivision of this into various sections. The main object to keep in view at the earlier stages of a competitive design was the retention of everything in as plastic a form as possible, so that all possible alternatives might be considered and compared before too much time was taken up with the detail of any one of them. It was most annoying, after having spent much time and skill in working out the detail of a scheme, to be forced to the conclusion that it was wrong in principle; for as competitions ought to be decided on their general merits as a solution of a definite problem, the competitor could not feel any hope of success with one, however brilliant in detail, that failed in its main conception. Only very rarely was the double competition of advantage to those competing. Almost the sole value of the double competition was to place before the promoters and their advisers a series of definite solutions from which they could realise how they had failed to grasp and express all that they had in mind. They were then able to supplement the programme and secure a design more closely approximating to their requirements.

Mr. A. W. S. Cross, Vice-President, proposed a vote of thanks to the lecturer, remarking that he had successfully accomplished a very difficult task in presenting, in an interesting historical sketch, a record of the principal architectural competitions of the past. He believed that the ancient Greeks, who were so prone to contests in rhetoric, literature, and drama, must have had competitions in architecture, especially as one of the best-known monuments in Athens that had survived to our own days was one erected in honour of the success of Lysicrates in training a premiated choir. Herodotus told us that after the naval

battle of Salamis every general was given two votes, to be awarded to the man who most worthily distinguished himself. It was afterwards ascertained that every general had given the first vote to himself; but from those placed second, it was easy to see who had the popular acclamation. It had been suggested that competitors would be the best assessors of the designs submitted, as they would best realise the problems to be solved, and if that were adopted, each architect should, as at Salamis, be given two votes. For the Duomo at Florence, it seemed to him that no elaborate architectural designs were prepared, but that each competitor tried to explain how he would construct a dome on the foundations already laid; and Brunellesco submitted models of his scheme, and harangued the jury from day to day at such length, and so unintelligently, that, in self-defence, they refused him admittance. As to the Louvre competition, it seemed that Colbert induced the King to reject the design of Bernini (which Wren, then a rising architect, greatly admired) in favour of the one by Perrault.

Mr. J. S. Gibson seconded the vote of thanks, observing that Mr. Lanchester's paper was both scholarly and practical. Competitions had a fatal fascination for the young architect. The Institute might undertake a valuable work in controlling competitions, and by insuring that the conditions were satisfactory.

Mr. A. E. Richardson, Mr. A. J. Davis, and Mr. E. A. Rickards also supported the motion.

Mr. S. D. Adshead feared there was a danger, in appointing a jury to assess designs, that its members should carry out the work in a mechanical way, simply judging minor details in the working out of a scheme, and not considering the broad result. On the whole, the single assessor, with his individual instincts and tastes, gave the best decision as a competitor.

Mr. H. H. Statham, on the other hand, would rather trust the combined judgment of two or three men acting in collaboration than the opinion of a single assessor, however able, impartial, and honest he might be. Sometimes a very eminent artist, of expert knowledge on one phase of building, was selected as assessor in a competition dealing with a subject to which he had given no thought, and as to which his views possessed no authority. He advocated the appointment of a small, but competent, jury, who would compare notes, and correct each other's failings.

Mr. W. J. Wills said one great advantage of the competition system had been to compel architects to study planning with the closest attention.

The President, in submitting the vote of thanks, which was carried by acclamation, said the conclusion to be drawn from Mr. Lanchester's remarks was that in competitions the scheme which was manifestly head and shoulders the best submitted was generally successful, and that a young architect had only to produce a design manifestly superior to all others, and the labour of the assessor would be unnecessary, as its pre-eminence would be self-proclaimed.

THE REMODELLING OF CENTRAL BRADFORD.

We announced last week the result of this competition for the replanning of streets in the central area of the city lying between Forster-square and Peel-place, and bounded by Market-street, Leeds-road, and Hall Ings, and comprising between ten and eleven acres. Fifty-four sets of designs were submitted, and although six Bradford architects and three from Leeds were among the competitors, all the prizes go out of Yorkshire.

The awards made by Mr. Reginald Blomfield, the assessor, were:—1 (£500), Messrs. Gibson, Skipwith, and Gordon, 5, Old Bond-street, London (design No. 25); 2 (£300), Messrs. Patrick Abercrombie and Lionel B. Budden, Liberty Buildings, Liverpool (No. 14); 3 (£200), Mr. Reginald Dann, Hunting

Grove, Crawley, Sussex, and Mr. John H. Horniman, 23, Robinson-street, Hastings (No. 36). The principal feature of the first scheme, according to the *Yorkshire Observer*, is a new street sixty feet wide, running from Peel-place to the Midland Railway station. Peel-place is considerably enlarged, and converted into a fine circus, forming the converging point of the projected new street of Hall Ings, and of a continuation of Bank-street, which is to follow a line which, roughly speaking, will cross the site of the George Hotel. On the northerly side of the circus the architects propose to place a fine semicircular sweep of buildings carried continuously from each extent of the circus and broken only by archways to give access to the new street, Bank-street, and Hall Ings. The line of Brook-street is to be altered so that it may be connected with Peel Place by means of an arcade. The line of Charles-street is also altered so that it leaves Market-street, crosses the new central street, and turns into Forster-square. Between Leeds-road and the Midland station there will be four railway bridges, one over Leeds-road, one over Hall Ings, one crossing the extension of Charles-street, and one passing over Forster-square.

The second scheme is very similar to the first in its main features. Peel-place is enlarged and made the radiating point of the replanned streets. The architects state their leading idea to be "the connection of the railway stations by a wide shopping street," and project a long central avenue almost identical with the proposed new street of the first scheme. Charles-street is to be treated in a similar manner to that of the first scheme. A new feature is a suggested road running coextensively with the new Midland Railway line. The site which will lie between the Bank-street continuation, Market-street, and Leeds-road is suggested as suitable for a new exchange, for which the architects offer tentative designs.

Mr. Dann and Mr. Horniman also propose a wide central street between the two railway stations, and they suggest a new exchange on the same site as that selected by the authors of the second scheme. They propose to carry Charles-street across the central thoroughfare, but to turn it parallel to the railway and carry it into Leeds-road. They suggest certain modifications of the line of Brook-street and connect it with Peel-place by means of a continuation of the Swan Arcade through the block of buildings which will divide Brook-street and Peel-place. They also propose to retain the Bradford District Bank buildings.

THE LONDON COUNTY COUNCIL.

The London County Council, at their meeting on Tuesday, received a report from the General Purposes Committee, stating that in response to public advertisement inviting applications for the position of valuer of the Council at a salary of £1,500 a year, rising to £1,800 by instalments of £100 every two years, members of the staff not being precluded from making application for the position, 20 applications were received. A special sub-committee made a preliminary selection of five candidates, who were seen by them, and they submitted to the committee the names of four candidates, who attended before them. The sub-committee unanimously recommended the selection of Mr. F. W. Hunt, the chief assistant valuer of the Council, for the appointment, and the committee now endorsed this selection and recommended the promotion of Mr. Hunt to the position. To comply with standing order No. 94 they submitted three names as follows:—Mr. F. W. Hunt, Mr. C. W. E. Mason, and Mr. A. Walker. Mr. Frank William Hunt being recommended for promotion to the office.

Mr. T. Barclay Cockerton, the district valuer, called attention to the fact that expenditure amounting to £107 is included in the accounts of the Education Committee in respect of the cost of legal proceedings relating to a summons issued by the Council

of the Metropolitan Borough of Stepney against a firm of contractors employed to erect school buildings on a site at Vallance-road, Whitechapel. The summons was instituted under the Metropolitan Management Act, 1855, for erecting without the license of the borough council a hoarding enclosing the site. The magistrate decided against the builders, and a case was stated for the opinion of the High Court, where the decision of the magistrate was upheld. The question in dispute was whether the London County Council, as the education authority, was exempt from the license of the borough council by reason of the operation of the Education Acts. It had been represented to the district auditor that the only satisfactory way to obtain a judicial decision on this point was for the Council to defend the builders in this case, but he had serious doubts whether it possessed the legal right to do this. Having regard, however, to all the circumstances, Mr. Cockerton had decided, with considerable hesitation, to allow the amount of the costs as a charge in the accounts.

The Improvements Committee reported that the Ecclesiastical Commissioners are arranging for the development of their London Bishoprick Estates to the west of Wood-lane, Hammersmith. The scheme provides for the construction of a number of roads, one of the principal of which would be about a mile in length, and would cross the estate from east to west between Wood-lane and Old Oak-road at the county boundary. The estate is situated on the route of the proposed "Western-avenue," the construction of which has been often urged by the London Traffic Branch of the Board of Trade in its annual reports, and which would be a continuation of the line of communication constituted by the Marylebone, Euston, Pentonville, and City roads, and on the portion of the new road west of Wood-lane. A width of 50ft. was originally proposed, but as a result of negotiation the Commissioners are prepared to provide a width of 100ft., the new road to be considered part of an arterial road running westward out of London. The Commissioners are prepared to surrender, free of cost, land which will provide the full width for nearly the entire length of the road, and to bear the cost of works equivalent to those required for a 50ft. road, on the understanding that the Council will accept responsibility for expense necessitated by the extra width of road. It is proposed that in the first instance only half of the full width of the road should be made up for traffic, the remainder being reserved until the full width is required for arterial traffic. On the road being made up in the first instance, the reserved area would be laid out, probably in grass. The cost falling on the Council in respect of the laying-out of the road in the first instance is estimated at £11,400; but ultimately, on the full width of the road being required for the accommodation of arterial traffic, the estimated further cost to the Council would be £21,500. No expenditure would be undertaken during the continuance of the War.

The Establishment Committee reported that on the signing of the contract for the building of section D of the new County Hall payments amounting to £5,860 would become payable to Mr. Ralph Knott, the selected architect, and Mr. W. E. Riley, the Council's official architect, as commission in respect of services already rendered. The designs were completed on November 1 of last year, but owing to the War the work will not be commenced for some time. They propose, therefore, that an advance of 75 per cent.—£4,397—of the amount of £5,860 be made to Mr. Knott and Mr. Riley, in the proportions of nine-tenths and one-tenth respectively.

The same committee reported that they had had under consideration the question of staff rearrangements to be made in the chief engineer's department in connection with vacancies which now exist consequent on the retirement of Mr. J. E. Worth, an assistant engineer (main drainage), and the death of Mr. J. R. Grimshaw, an assistant district

engineer (main drainage). They recommended:—

(a) That Mr. J. P. Harris (£450 a year), an assistant district engineer (main drainage) in the chief engineer's department, be promoted to be a principal assistant at the salary of £500 a year. (b) That Mr. W. T. Hodgson (£400 a year), a senior assistant in the chief engineer's department, be promoted to be a principal assistant at the commencing salary of £425 a year, rising by one annual increment of £25 to £450 a year. (c) That the salary (£350 a year) of Mr. S. B. Sandford, a senior assistant in the chief engineer's department, be increased to £375 a year, and that a year later he be promoted to be a principal assistant at the commencing salary of £400 a year, rising by annual increments of £25 to £450 a year. (d) That Mr. H. G. Lloyd (£300 a year) and Mr. D. C. Graham (£300 a year), assistants in the first class in the chief engineer's department, be promoted to be senior assistants, each at the commencing salary of £325 a year, rising by one annual increment of £25 to £350 a year. (e) That Mr. H. P. Cruse (£200 a year) an assistant in the second class in the chief engineer's department, be promoted to the first class at the commencing salary of £230 a year. (f) That, subject to their passing the usual medical examination, Mr. Thornton Brown Smith (£4 10s. a week) and Mr. Edward Bellasis Maitland (£2 a week) be appointed in section (b) of the first class and in section (a) of the second class in the chief engineer's department at the commencing salaries of £245 and £150 a year respectively.

The Education Committee reported that the reorganisation of evening institutes in London had led them to reconsider the scheme under which scholarships and exhibitions in art, science, and technology are awarded. Under the existing scheme 60 art scholarships, 110 art exhibitions, 15 science scholarships, and 180 science exhibitions are offered annually. The scholarships are in each case of the value of not more than £50 per annum, in addition to free education and an allowance for books and materials, while the exhibitions are of the value of £3 per annum, with tuition fees. The scholarships are tenable in day courses at recognised institutions, and the exhibitions are tenable in evening classes. The object of the scholarships and exhibitions is to enable a deserving scholar to proceed to a place of further education and to pursue his studies there with some degree of support. The award is designed to cover the necessary travelling expenses and the cost of books and materials and meals. The greater number of scholarships awarded in the past have been tenable in connection with the engineering trades. For students in these trades there are other scholarships and exhibitions—e.g., the Whitworth, available for those who reach a certain standard of attainment—whereas in other trades this is not the case. Consequently, the difficulties in taking up scholarships are, under the present system, much less in engineering than in other trades. The committee are of opinion that the awards should in future be more evenly distributed among the different trades. Under the existing scheme exhibitions are awarded on the result of examinations held by the Council, or by the City and Guilds Institute, or both, or on the merits of works submitted combined with successes in those examinations. This system has made it difficult to compare the work of the students in different trades; nor would any single examination, in the opinion of the committee, serve this purpose. They accordingly suggest that in the case of exhibitions, instead of making the awards as hitherto, on the basis of competition between individual students, the exhibitions should be allocated among the various institutions, and that the selection should be made by interview, in which the responsible masters of the evening institutes concerned shall take part. They propose that exhibitions shall be of three kinds:—(1) Exhibitions to enable pupils from trade, domestic economy, and central schools, who have completed the courses at these schools, to take up evening studies at polytechnics, technical institutes, or schools of art. (2) Exhibitions for students who have already completed two sessions in evening institutes to enable them to proceed to higher institutes, polytechnics, technical schools, or schools of art, a certain number of exhibitions to be allocated to each institute or group of institutes in proportion to the number of qualified students, and awarded on a minimum number of hours' attendance by the individual student during the session. (3) The majority of exhibitions under the existing scheme are awarded to students of higher institutes; they propose,

therefore, that a third set of exhibitions shall be offered to students of such institutes and to other entrants who are not eligible to compete for the exhibitions provided under (i.) and (ii.) These students fall into two categories—(i.) those already in attendance at higher institutes; (ii.) entrants to higher institutes. In the case of scholarships, the committee propose that these shall be awarded as a definite means of enabling students who are engaged in trades or occupations, and have also attended evening classes for at least two years, to give up their day work and pursue their studies at day courses in university colleges, higher technical schools, or other centres. The grant should be raised in the case of these scholarships to £80 per annum, and the selection should be made by interview. The opportunities which are offered to students who have gone through the regular courses in secondary schools of securing college scholarships and exhibitions are not open to those who have gone through a workshop course of training. The proposed scheme will afford definite facilities for obtaining the highest technical education to students who are compelled by the necessities of home circumstances to leave school at 14 years of age. A boy who leaves the elementary school at 14 years of age will be able to proceed, without fee, to a junior technical institute, where he will be instructed in a course based upon his occupation; after two years' successful attendance he may proceed with an exhibition to a polytechnic, and pursue his duties in evening classes without any charge to himself. After three years' study at 19 years of age, it will be possible for him to compete for a technology or an art scholarship which will carry him to the Imperial College, or to a similar higher day technical course. A student educated in a trade, domestic economy, or central school will be able to obtain, if qualified, a technology exhibition, and proceed direct to a polytechnic, technical institute, or school of art about the age of 16, where he (or she) may remain for three or four years, and at the age of 19 compete for a technology scholarship. A student in a higher institute will be encouraged to continue his studies at a higher institute to the point at which he can compete for a scholarship which will enable him to take up full-time technical study in the day time. In these ways complete ladders will be provided for elementary, central, domestic economy, and trade school pupils and for evening students. The committee are of opinion that the new scheme should be announced in the Council's scholarships handbook for 1915-16; the first awards under the new scheme would be made during 1915-16, and would thus become operative at the commencement of the session 1916-17. Under the existing scheme the maximum yearly expenditure approved by the Council is as follows:—60 full-time art scholarships, £50 each, £3,000; 110 evening art exhibitions, £3 each, £330; 15 full-time science scholarships, £50 each, £750; 180 evening science exhibitions, £3 each, £540; books and apparatus and modelling and casting fees, £330; in all £4,950. Under the proposed new conditions the expenditure would be as follows:—25 technology scholarships, £80 each, £2,000; 23 art and artistic crafts scholarships, £80 each, £1,840; 100 exhibitions, Class A, £3 each, £300; 140 exhibitions, Class B, £3 each, £420; 120 exhibitions, Class C, £3 each, £360; in all £4,920.

The Stepney Borough Council were given sanction to borrow sums totalling £1,003 for the purchase of properties for street improvements.

TEMPERATURE CHANGES IN MASS CONCRETE.

By CHARLES H. PAUL, M.Am.Soc.C.E., and A. B. MAYHEW, Assoc.M.Am.Soc.C.E.*

If free to move, all structural materials undergo changes in length due to changes in temperature, and, if not free to move, a

* Synopsis of a paper presented at a meeting of the American Society of Civil Engineers on May 5.

stress in the material is produced equal to that required to produce the deformation in length. In order to determine the extent of this change in length, or the corresponding stress in the material, it becomes necessary to know the range in temperature to which the material is to be subjected. In large masses of masonry, the changes in temperature at varying distances from the exposed faces are not known, and, largely due to this fact, the changes in length of large masses of masonry, together with the actual internal distribution of temperature stresses, are among the most indefinite factors in the design of such structures. The purpose of this paper is to place before the society the results, thus far obtained, of experiments being made to determine the changes of temperature in the concrete of the Arrowrock Dam, together with a description of the apparatus used. Although some of these experiments have been in progress for more than a year, the greater part of the results is still affected by the high temperature produced by chemical action while the cement is setting, and, therefore, this paper will be largely descriptive, and should be considered in the light of a preliminary paper. Among the conclusions already reached are the following:—

(1) Large bodies of concrete deposited rapidly during a summer season develop a temperature of from 90deg. to 95deg. within a period of about 30 days, and maintain nearly that temperature for several months.

(2) In the case of concrete 1ft. from an exposed face, there is a daily variation in temperature of about 2deg. when the daily variation in the temperature of the air is about 50deg.

(3) In the case of concrete 2ft. from an exposed face, there is a daily variation of less than 1deg. when the daily variation in the temperature of the air is about 50deg.

(4) In the case of concrete 3.5ft. from an exposed face, no daily variation in temperature is apparent when the daily variation in the temperature of the air is about 50deg.

(5) The seasonal variation in the temperature of concrete 3.5ft. from an exposed face is about 32deg. when the seasonal variation in the mean daily temperature of the air is about 75deg.

(6) The experiments have not yet been carried far enough to show the seasonal variation at other distances from exposed faces, but it is probable that they become very much less as the distance from the face increases.

Mr. J. Adams, sanitary inspector at Shrewsbury, has been appointed highway surveyor, sanitary inspector, and waterworks manager to the urban district council of Newport, Selop, at a combined salary of £115.

At Crompton, on Tuesday, a Local Government Board inquiry was held by Mr. W. O. E. Meade-King as to an application from the urban district council for sanction to borrow £2,490 for sewage-disposal purposes.

Mr. Walter Gowans, civil engineer, of Lorne-street, Leith, was run over by a motor car and killed in Easter-road on Tuesday week. He was the eldest son of the late Sir James Gowans, ex-Dean of Guild of Edinburgh. Mr. Walter Gowans was for a considerable number of years employed as a civil engineer with Messrs. John Best and Sons, contractors, Edinburgh. He was engaged in connection with the Talla Reservoir and other large public works.

At the City Court of Common Council yesterday (Thursday) afternoon, an agreement was ordered to be sealed relating to the height of proposed new buildings in connection with the rebuilding of No. 3, King William-street, No. 2, King William-street, and Nos. 33 and 35, St. Swithin's-lane, for the Phoenix Assurance Co., and the Caledonian Insurance Co. With reference to the Leadenhall-street widening now in progress, the Improvements Committee submitted for adoption an arrangement for acquiring the freehold interest of the Worshipful Company of Tilers and Bricklayers in the premises Nos. 51, 53, 54, and 55 Leadenhall-street, for the sum of £16,500, the amount of the Company's claim being £21,930. They further submitted for adoption an arrangement for the sale of the freehold of the surplus land of No. 67 and part of No. 68, Leadenhall-street, having an area of 638ft. super., to the Worshipful Company of Vintners for the sum of £3,922.

OBITUARY.

We sincerely regret to announce the death, in his sleep, of heart-failure, after a week's indisposition, of Mr. W. G. Sutherland, on the 16th inst., at the age of 65, at Ellerslie, Ashton-on-Mersey. He was buried at Brooklands Cemetery on Thursday, at 2.30 p.m. Mr. Sutherland was one of the oldest contributors to this journal in past years, and it was at our suggestion that he started the *Journal of Decorative Art* in 1881, which has ever since been the official organ of the National Association of Master House Painters and Decorators of England and Wales, and the Association of Master Painters in Scotland. Mr. W. G. Sutherland was born in Birmingham in 1850, and went to Manchester with his father, Mr. W. Sutherland, in 1865. He was associated with his father in a decorating business up to 1873, when Mr. Sutherland, senior, retired, and Mr. W. G. Sutherland carried on the business. In 1881 Mr. Sutherland published the first number of the *Journal of Decorative Art*, and has edited each number since then with conspicuous ability. Mr. Sutherland has been the secretary of the National Association since its birth. He was also a member of the committee for the Royal Jubilee Exhibition, held in Manchester in 1887. Mr. Sutherland was a member of the Institute of British Decorators, and in January, 1902, he was given the Freedom and Livery of the Painters Stainers Company in recognition of his services to the trade. He was also an honorary member of the Dutch Association, and of the Department Committee appointed four years ago to inquire into the dangers of the use of white-lead in the painting of buildings, and wrote a minority report, to which we referred on p. 540 of our issue of May 7.

Major Andrew Roddick, Essex Yeomanry, who was reported on Tuesday to have been killed in action in France, had for eleven years past been a Fellow of the Surveyors' Institute, and senior partner in the firm of Messrs. Roddick, Colvin, and Clark, 4, Adelphi-terrace, Strand, W.C. Major Roddick, who had been many years in the Yeomanry, served with Paget's Horse in the South African War, for which he had the Queen's medal with three clasps. He resided at Upshire Hall, Waltham Abbey.

The city council of Liverpool will not be allowed by the Local Government Board borrowing powers for the £11,500 required for the provision of working men's dwellings unless it can be shown that they are necessary for reasons of public health.

The Newark Education Committee met for the first time last week in the restored Tudor Hall of the Old Magnus Buildings, where future meetings of the authority will be held. Care has been taken to make the premises approximate to their original condition.

It was reported to the Metropolitan Water Board at their meeting on Friday, that the laying of a 12in. cast-iron main from Green-street Green to Southfleet and a branch 12in. main to South Darenth, as far as the Farningham-road, had been completed at a total cost of £9,590.

The new workhouse infirmary at St. Austell, which has been erected at a cost of £4,000, was opened on Friday. The new building is for the accommodation of women, for whom there is accommodation for twenty in the main ward, and for imbeciles, for twelve of whom there is accommodation on the ground floor. The architect is Mr. B. C. Andrews, of St. Austell, and the builder Mr. J. Paynter.

The appointment of a fourth assistant to the consulting architect to the Government of Bombay has recently been sanctioned, and Mr. Duckett, A.R.I.B.A., has been appointed to the post. Mr. Duckett, who is 30 years of age, received his early architectural training from Mr. Jas. H. Mangan, Guildhall-street, Preston, and was for six years employed as leading assistant to Messrs. J. Oldrid Scott and Son, 2, Dean's Yard, S.W. Shortly before he was appointed to his present post, he was in the offices of Messrs. Lancaster and Rickards, Bedford-square, and afterwards in that of Mr. Courtenay M. Crickmer, Lincoln's Inn Fields. Mr. Duckett has been engaged on an agreement for three years, extensible to five, and on a salary of Rs. 450 a month.

COMPETITIONS.

DARWEN.—The competitive plans from local architects for the Lightbown Homes have been submitted by the trustees to Mr. G. H. Willoughby, F.R.I.B.A., of National Buildings, Parsonage, Manchester, who has adjudged the plans sent in under the nom de plume of "Falcon" to be the best, and the trustees have adopted his award. The selected plans have been drawn by Mr. George Gilbert Sames, of 2, Knott-street, Darwen, who will now prepare working drawings for erection of the buildings. The homes, which are to be built at the corner of Owllett Hall-road and Earnsdale-road, will be built of stone. There will be eight houses, built in such a manner as to obtain the maximum of light. The living-room will extend from front to back, and there will be windows at the front and back. There are also two bedrooms and a scullery, with all conveniences. A garden with grass plots will extend in front of the houses, and in the centre will be a sundial and seats, whilst at the rear there will be accommodation for gardening. All the houses will be on the same level, thus dispensing with steps of any kind.

PROFESSIONAL AND TRADE SOCIETIES.

AUCTIONEERS' AND ESTATE AGENTS' INSTITUTE.—The annual meeting of this Institute was held on Thursday in last week. Mr. J. T. Woolley, of Salisbury, the president, in moving the adoption of the report, said that they as a profession were realising more and more the consequences of the great disturbances of the normal conditions of their business due to the War. Before the outbreak of the War the condition of the estate market was very promising. Business was broadening in nearly every direction. Even building-land, which had suffered most as a result of the financial legislation from 1910 onwards, was beginning to find a ready sale. The first half of the year was very encouraging. But during July the public evinced little or no desire to embark in fresh ventures, investors concentrating their attention rather upon the realisation of securities than upon the spending of more money. Auctioneers allayed any tendency to panic on the part of clients by at once counselling a policy of holding on to property and of refraining from forcing sales. This policy they had been advising since the beginning of the War; consequently the turnover, alike in the auction-room and by private treaty, had fallen below any previously-recorded level. But their clients had reason to thank them for the advice tendered, and every day now brought nearer the time when work could be again resumed at somewhere about the normal range of prices. Real estate had not suffered any greater depreciation than other high-class investments. The membership of the Institute was approaching 3,200. Nearly 400 of their members were serving in His Majesty's Forces—over 12 per cent. of their total membership. Mr. H. H. Montgomery (Bel-fast) seconded, and the report was adopted. The following were elected members of the council:—Mr. E. C. Foster (Messrs. Foster), Pall Mall; Sir Howard Frank (Knight, Frank, and Rutley), Hanover-square; Mr. John Marks (Marks and Barley), High Holborn; Mr. R. T. Taylor (Jones, Lang, and Co.), King-street, Cheapside; Mr. W. H. Wells (Chesteron and Sons), Kensington; High-street; Mr. G. L. Battersby (Battersby and Co.), Dublin; Mr. F. G. Bond (Robert Bond and Sons), Ipswich; Mr. W. H. Bradwell (J. H. Bradwell and Sons), Nottingham; Mr. Peter Davies, Liverpool; Mr. Oswald Kilburn (Saville and Kilburn), Wakefield; Mr. W. W. Sanderson (B. Sanderson and Son), Newcastle-upon-Tyne; Mr. W. J. Sherlock (Jos. Sherlock and Sons), Manchester; and Mr. E. Whittindale, Coventry.

The corporations of Walsall and West Bromwich propose to erect a joint sanatorium on a site at Great Barr at an estimated outlay of £20,000.

Our Illustrations.

ROEHAMPTON COURT, S.W.

This house is built of grey stocks, with red-brick dressings and a red brick cornice. The roofs are tiled. In scheming the layout of the plan, care was taken to place the principal rooms towards the south aspect, and so secure the prospect of Richmond Park, which lies in this direction. The ground-plan is attached to the view which is now being exhibited in the Royal Academy. The first floor contains eleven bedrooms, three bathrooms, and the usual domestic conveniences. There are seven bedrooms on the second floor, with bathrooms, two boxrooms, and linen-stores. The chief rooms are panelled. Mr. F. S. Chesterton, of Cheapside, E.C., is the architect.

NEW TOWN-HALL AND MARKET BUILDINGS, DENBIGH.

The design shown in our illustration, the view being reproduced from the original now in the Royal Academy Exhibition, is being carried out. The building is the result of an open competition held in 1910, when Mr. Elcock's design was placed first. Originally



ST. MICHAEL'S CHURCH, LOUGHOR, NEAR SWANSEA.

Mr. W. D. CAROE, M.A., Architect.

the scheme included a magistrates' court, corporation offices, and a council-chamber, with a small assembly-hall. Plans were prepared on these lines, but were eventually rescinded by the council, owing to the opposition of the ratepayers, and the design shown was approved and is now in hand. The buildings are being carried out in a local limestone with red sandstone dressings, and an attempt has been made to erect a building such as will continue the traditions of the town, which include a very fine castle and other features reminiscent of the stirring episodes in the history of Denbigh. The plan is of a very simple character, and includes on the ground-floor a large market-hall, with space for a small fire-engine station, council officials' offices, and the necessary staircases. On the first floor a hall has been arranged to accommodate 1,500 people, and in the construction of this portion of the building reinforced concrete has been largely used, with the result that a very considerable saving has been effected in the price of the building. A spring floor is to be fixed in the hall, so that it may be used for dancing, and a platform has been provided so as to accommodate the large choirs which are a feature of Welsh social life. A large gallery is carried on cantilevers, and supporting columns are done away with as far as possible. Altogether, the building seems to be of a particularly satisfactory character, and we are glad to note a departure from the usual municipal design, and the evident endeavour of the architects to continue the local traditions, and to get away from the usual "competition design." The cost of the building goes to show that the planning has been most economical, as the whole outlay is not to exceed the sum of £9,000. The building contractors are

Messrs. Morton, Browne, Ltd., of Chester, and Mr. Appleton is the clerk of works. The architects are Messrs. Brooke and Elcock, Royal Exchange Buildings, 18, Exchange-street, Manchester. The spring floor is being installed by Messrs. Francis Morton, Junior, and Company, of 110, Cannon-street, London, E.C. It is their patent "Valtor" system of steel springs and girders. The total area occupied by the dancing-floor is 52ft. long by 37ft. wide, and the floor is carried upon eight rows of T-section girders, each row being divided into 15 lengths coupled on to their patent spring fittings. Each spring fitting rests upon a small hardwood block let into reinforced-concrete floor below. In this case, there being no locking gear, the springs are made of medium resilience, so that when the floor is used for purposes other than dancing there will not be an uncomfortable amount of vibration.

ST. MICHAEL'S CHURCH, LOUGHOR, NEAR SWANSEA.

This church, which we illustrate from the drawing now at the Royal Academy, is designed to fulfill the needs of a growing industrial village a few miles from Swansea. It is intended to be erected in local stone, and to maintain, as far as possible, the

Welsh characteristics of early church-building, in which the local materials are so aptly used. Mr. William D. Caroe, M.A., F.S.A., F.R.I.B.A., of Westminster, is the architect.

NAIROBI CATHEDRAL, EAST AFRICAN PROTECTORATE.

The future Cathedral at Nairobi, which we illustrate this week, is to be built in a grey local stone, using Italian tiles for covering the roofs. It is not a large building for a cathedral, and even so, will probably be built in sections. It is proposed to erect the nave and nave aisles as the first portion. The plan includes a plan and nave aisles, with an open narthex at the west end, a fine, lofty crossing, and transepts surmounted by towers. The tall choir and sanctuary have aisles on each side. The chapel is arranged alongside of the north choir aisle, and the vestries are in the corresponding position on the south side. The design is the work of Mr. Temple Moore, F.R.I.B.A., and Messrs. Tate, Smith, and Henderson, of London and Nairobi, have been appointed as local architects to carry out the work under his directions. The drawing reproduced is now at the Royal Academy.

MUNICIPAL BUILDINGS, GOUROCK.

SELECTED DESIGN.

We illustrate this chosen scheme by plans, elevations, and section. The site is at the corner of a "place," for the most part open on one side to the Firth of Clyde, and a somewhat narrow street leading out of it southwards. The short front faces the former, while along the latter an extended but very shallow block has been acquired, rather more than one half of which is to be utilised at present. The accommodation

required by the corporation consisted of a council-chamber, with the usual municipal offices, of limited dimensions, and a large court-room, together with lettable subjects in the form of premises for the local estate office, the parish-council, shops, and three and four-roomed houses. A tower was also suggested, but the sum allowed under the conditions (£7,000) was already quite insufficient for the provision of the required accommodation without such a desirable adjunct. The position of the court-room was fixed by its relation to the police buildings to be erected alongside. The council-chamber, as giving the only opportunity for architectural development and emphasis in elevation, appeared to call for the most prominent situation on the angle of the building. From this, with the necessity of some feature to mark the centre of the front as ultimately to be extended, the arrangement of the plan and the design generally, including the style adopted, seemed to develop naturally. The design was placed first in a limited competition by the assessor, Sir John J. Burnet, and, having been accepted by the town council, is now being developed on larger lines to meet additional requirements with a view to an early commencement of the building. Mr. Alexander N. Paterson, M.A., A.R.S.A., F.R.I.B.A., of 266, St. Vincent-street, Glasgow, is the architect.

As a matter of urgency, the sanction of the Treasury is being asked by the city council of York to the construction of a new sewer at Yarnsley Bridge at an estimated cost of £6,000.

Caton-road, Lancaster, is about to be widened at a cost of £5,013. The Road Board and the Lancashire County Council will grant £4,305 towards the outlay, the remainder of which will be borne by the corporation.

In view of a letter from the Scotch Education Department with reference to the organisation of labour, the building committee of Edinburgh School Board have agreed that tenders for the erection of the Bellevue workshops be not invited for the present.

The Local Government Board have given authority to the corporation of Southend-on-Sea to prepare a town planning scheme under the Housing and Town Planning Act, 1909, in respect of an area of about 62 acres forming part of the Chalkwell Estate within the county borough.

The official returns from the United States show a diminution in the total building operations in eighty-four principal cities, as compared with the corresponding month last year, of approximately 7 per cent. The following cities showed an increase of building operations:—Albany, Atlanta, Baltimore, Bridgeport, Cincinnati, Cleveland, Indianapolis, Louisville, Minneapolis, New York, Philadelphia, St. Paul, Syracuse, and Washington, D.C.

Concrete-road construction in the United States, according to the "Bulletin on Concrete Roads," has increased from 364,000 square yards laid in 1909 to 19,200,000 square yards laid during the season of 1914. This area laid down in 1914 is nearly double that laid in 1913, and over ten times the yardage laid in 1911. The yardage for 1914, which includes city streets as well as country roads, paved with concrete would be equivalent, if laid in one stretch, to a roadway 12ft wide and 2,700 miles long.

The Plymouth Corporation have decided to enter into negotiations for the purchase of the undertakings of the Devonport and District Tramway Company and of the Plymouth, Stonehouse, and Devonport Tramway Company, instead of waiting till the leases fall in, in 1919 and 1922 respectively. The corporation will take immediate possession of the plant, etc., and in the event of differences as to the prices to be paid, these will be settled by arbitration.

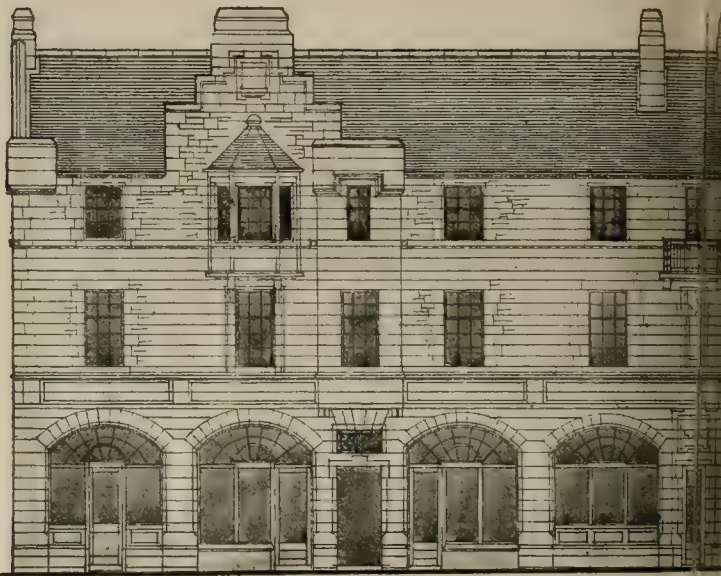
The formal opening of the Iveagh Play Centre in St. Patrick's Park, Dublin, erected through the munificence of Lord Iveagh, took place recently. The buildings now completed are the final part of the 1903 scheme, which resulted in the demolition of one of the worst slum streets in the city, and the substitution thereof of dwellings at a moderate rent, with large playgrounds for the children. The buildings just opened cost over £40,000, and have been erected from designs by Messrs. McDonnell and Reel, selected in competition. The contractors were Messrs. McLoughlin and Harvey, Ltd.

MUNICIPAL BUILDINGS GOUROCK

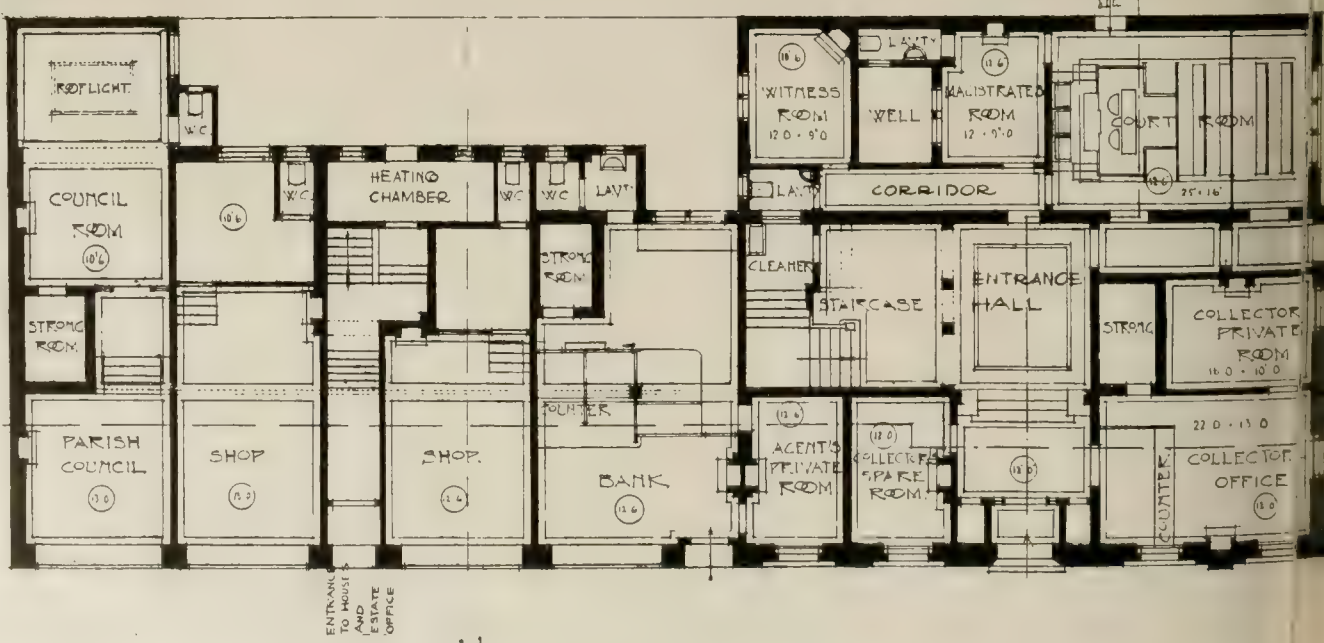


ENTRANCE HALL. COURT ROOM.

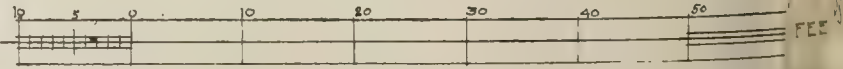
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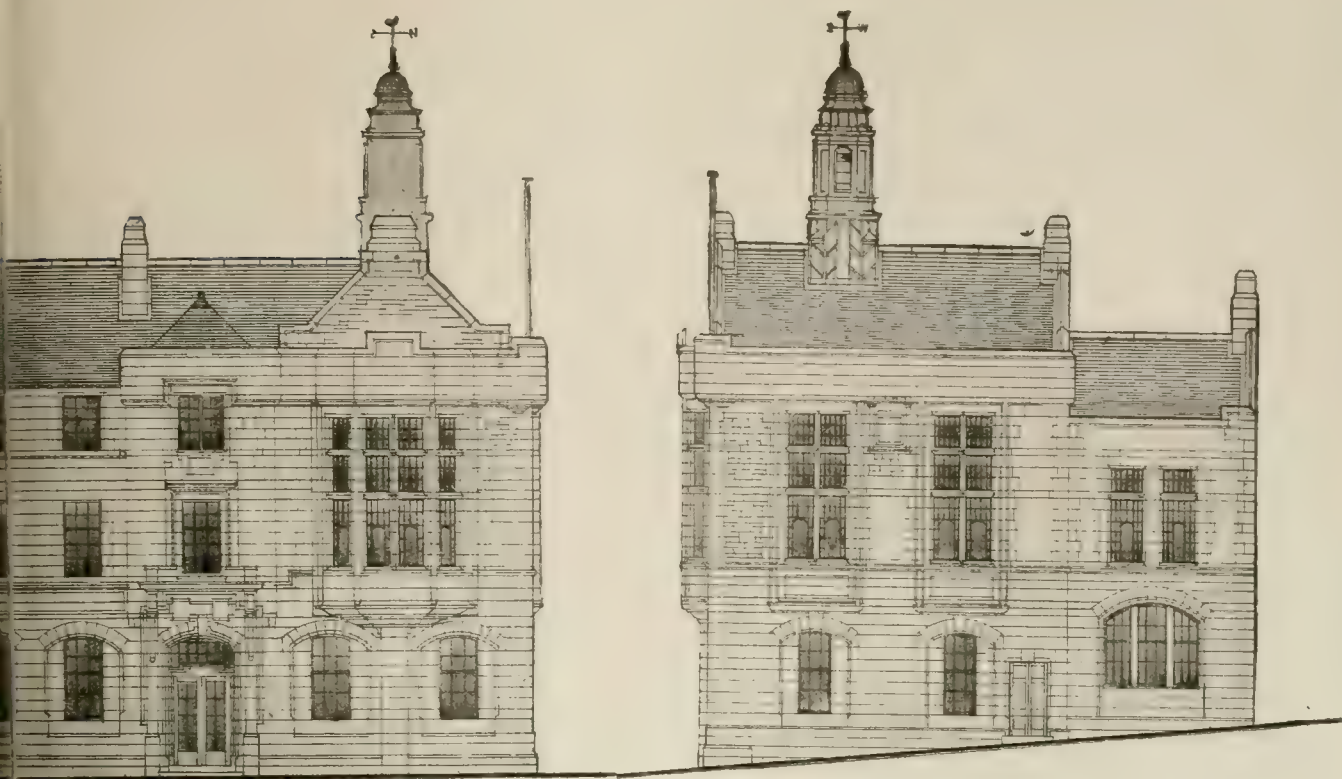
ELEVATION TO SHORE STREET



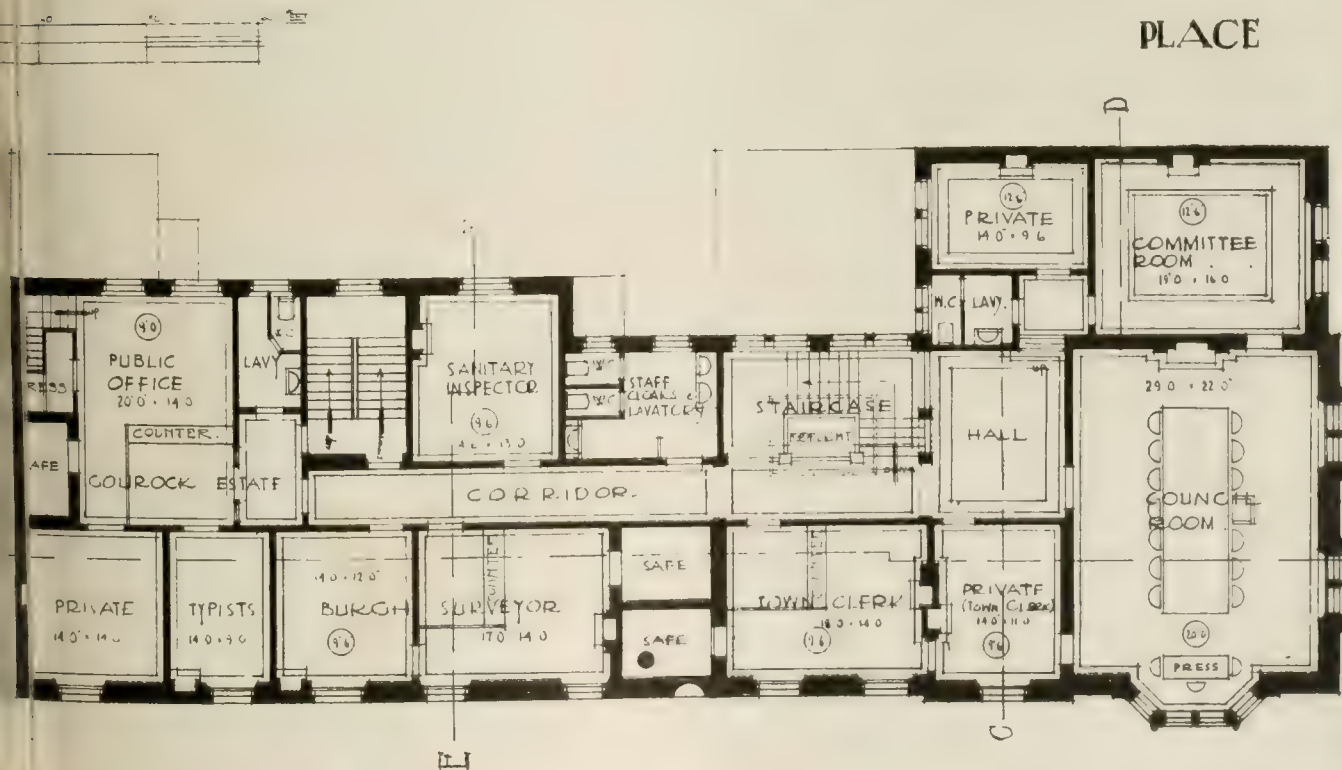
GROUND FLOOR PLAN



SELECTED DESIGN · ALEXANDER · N · PATERSON · MA · ARSA ·
ARCHITECT.



ELEVATION TO KEMPOCK
PLACE



FIRST FLOOR PLAN

Corrente Calamo.

In these days of wanton strikes, a sixpenny booklet by Mr. George Edson Toogood (London: A. Brown and Sons, Ltd., 5, Farringdon-avenue, E.C. 6d.) is worth reading. Unlike some writers, the author does not rave out at the workmen, or denounce the employers as "bloated capitalists." He points out that the bitter industrial unrest which has wasted millions, and engendered a class hatred as evil as that which Germans cherish for us, is but too likely to be intensified when the War is over, and he makes suggestions with a view to mend matters which are worth consideration. A higher standard of trade-union labour, the grading of labour, with chances for every man of promotion to higher wages, the total elimination of black-leg competition, complete recognition of the unions by employers, and proper control of their members by their own rules—these are some of his propositions for the establishment of a real partnership in the industries of the nation. In a concluding chapter he pleads for help from our public elementary schools, which certainly is not given to-day. Surely an industrial nation should have a system of public education best suited for an industrial country, with the preparation of manual-workers' children to become efficient workers themselves as its main object! Surely no boy of any social class should leave school without a knowledge of the rudiments of industrial economics and some appreciation of the services rendered to the nation by mental labour, manual labour, and working capital respectively.

Meanwhile, at once, by a short Act of Parliament, strikes in any trade, without due notice, should be made punishable by imprisonment with hard labour, during the War, and by a very stiff period thereof for the promoters. It is useless to try to dismiss the suspicion that some of the instigators of such are the instruments of German intrigue. The London tramwaymen's strike this week is a quite possible instance; one evil result being the delay caused to the employees at Woolwich Arsenal, to say nothing of the shameful inconvenience to the workers of London generally, aggravated as it has been by the bad weather. We do not offer any opinion offhand as to the reasonableness of the men's claims. If they are ten times as reasonable as the men insist, the strike, all the same, was a flagrant breach of an agreement between the London County Council and its employees. It was, besides, a discreditable and unpatriotic attempt to take advantage of a shortage of labour due to the fact that many of the men's own colleagues have joined the Army. The motor-bus service, which might have provided an alternative public service, has been greatly reduced owing to War Office demands for men and material. Thus, the tramwaymen were able to hold to ransom the millions of workers, most of the latter far less well paid than themselves, and whose daily bread depends on their reaching their work. This, at the moment, is a crime against the public weal, and should be punished as such with rigour, and any rowdy protests should be promptly suppressed in the shortest and sharpest fashion.

The British Fire Prevention Committee reminds the public that it is well within the

bounds of possibility that attempts may be made to start incendiary fires, and makes the following suggestions:—The various fire brigades cannot be expected successfully to deal with any large number of outbreaks, and their attention would in any case be primarily devoted to fires affecting Government offices, workshops engaged on Government work, military stores, docks, and hospitals, and the like, rather than to private property or semi-public property, however valuable. It therefore behoves all owners and occupiers of such premises to do their best to organise for self-help. Innumerable establishments, such as factories, warehouses, stores, modern office blocks, flats, hotels, and large private houses, as also the semi-public establishments like schools, baths, theatres, music-halls, and assembly-rooms, are equipped with internal hydrant services and first-aid fire appliances. These should be promptly examined and the staffs (both male and female) frequently practised in handling the gear. The smaller establishments, such as shops, offices, and ordinary domestic buildings, should have an ample supply of buckets (kept ready filled with water), and where funds permit, one or more small hand-pumps. Occupants should know how to use these appliances efficiently. Every effort should be made by the public to assist the fire brigades in their onerous duties; but they should not omit on any account immediately to notify any outbreak that comes to their notice by telephone or otherwise—the method of calling assistance to be posted up in a conspicuous position. Certainly the public would be well advised to have these matters attended to at once, and should remember that fires caused by incendiary bombs, if promptly tackled with water in fair bulk, force, and continuity, need not spread, and are not quite the terrifying problem to deal with that the enemy would make them. Those who desire additional useful hints on the fire question arising from possible air raids should apply for the British Fire Prevention Committee's "Warnings," which are provided gratuitously upon written application to the Registrar, at 8, Waterloo-place, Pall Mall, London, S.W. (enclosing large-size stamped and addressed envelope). These "Warnings" give useful information as to the necessary precautions and how to act when the emergency arises. Where special technical advice is desired, application should be made in writing, which will either be dealt with direct free, or, where it is a matter affecting local authorities, forwarded in the proper direction for attention.

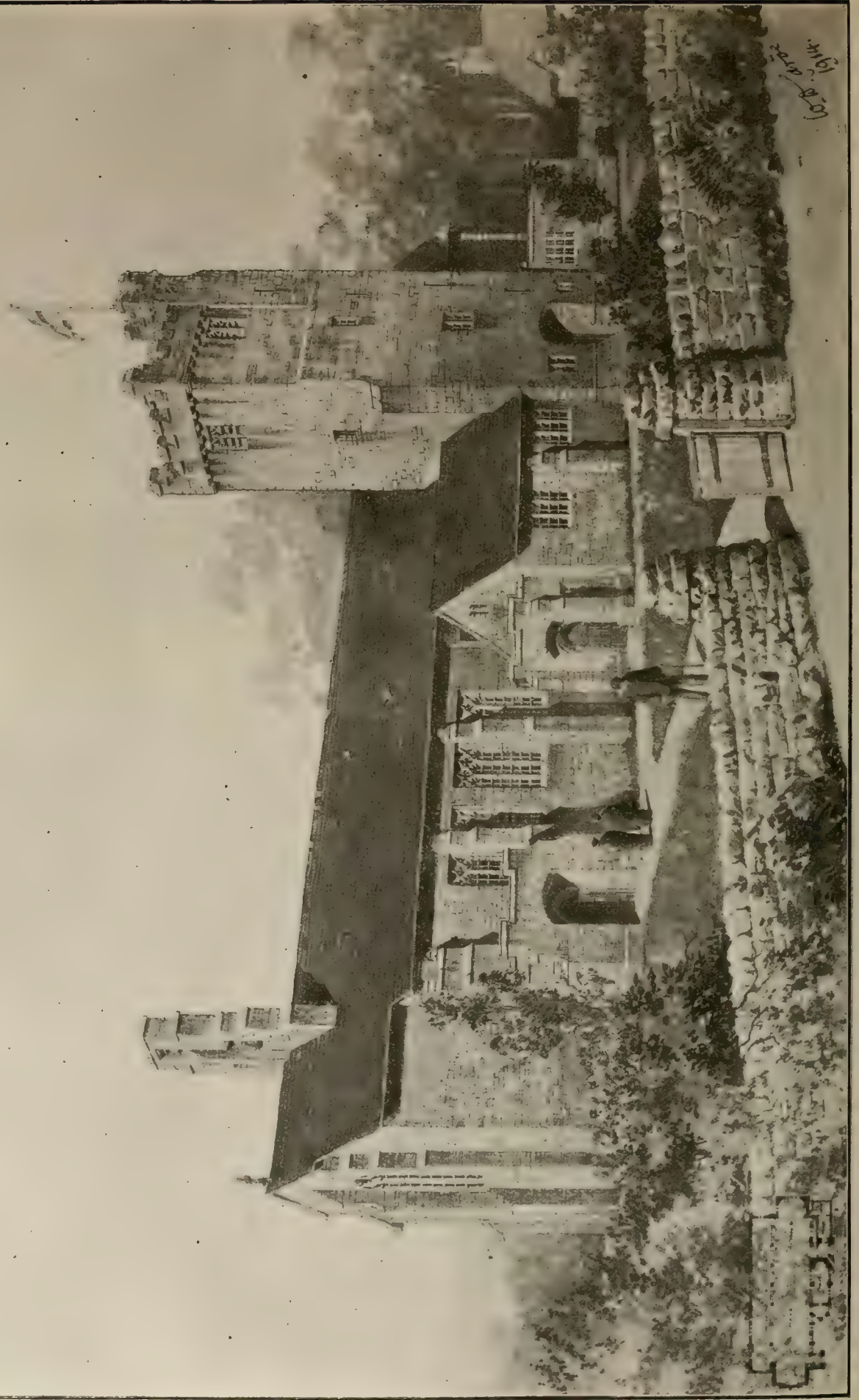
Mr. Oscar Fleming has compiled and published an appeal to all who value the noble buildings in Flanders and France which the German barbarians have desecrated and destroyed, to take pen in hand at once and write to the Governments of their countries, asking them to accord their prompt assent and subsequent support to any proposal that may be made to them for the appointment of an International Commission instructed to study the question of the preservation of historic buildings during the War, and be empowered to take any action in pursuance of that end that appears to them in the circumstances to be advisable. He also asks all such to buy copies of this appeal—which are supplied at the bare cost of production—and have them sent to their friends, so that they may also express their will and in their turn

send on this appeal to their friends? In this way the appeal will be scattered far and wide over the earth, and the strength of the voices may be so great that the muttering guns will have to recognise them. No copyright has been taken out. Anyone may reprint at will, and copies will be sent to any names and addresses given. Copies will be addressed, stamped, and posted for an inclusive payment per copy of 4 English pence, 50 French centimes, or 10 American cents. The appeal cannot be sent to Germany or Austria; but if copies happen to reach those countries, it may be found that there are still citizens there who—leaving aside recrimination—will join their voices in this attempt to save the world's historic buildings. The appeal is published by Messrs. Hooker, Westerham, Kent, England. It is a pamphlet of thirty-four pages, and succinctly sets out, item by item, the various acts of destruction chronologically tabulated, together with the protests made by the world's artists, architects, and learned societies—among the latter the R.I.B.A., which, we regret to say, later on declined to dissociate itself from the dishonoured German members of its body—a blot on its own reputation which is felt keenly, as witness a letter from one Fellow which appears elsewhere this week. And no wonder! From every British Order of Knighthood enemy aliens are to be expelled, but the R.I.B.A. still shelters them as brethren!

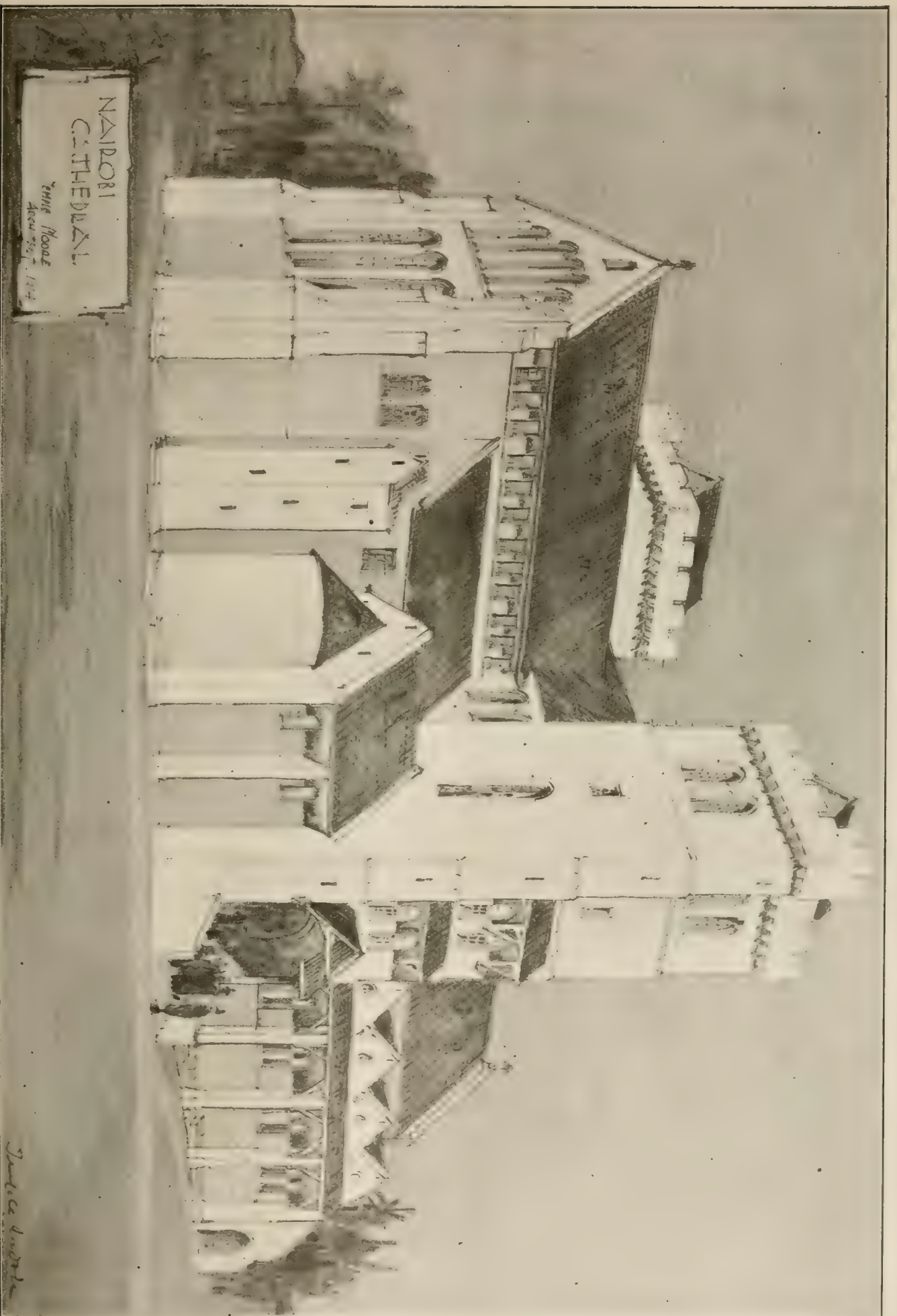
Mr. Anthony R. Barker, of 491, Oxford-street, W., is publishing "The First Belgian Portfolio," limited to one hundred copies, of six original lithographs of Belgium drawn direct on the stone by the artist. The price is five guineas, and the entire proceeds are being handed to King Albert for the immediate relief of distress in Belgium. From the reduced specimen lithograph of Namur sent us, we should say the series was well worth the money, and that collectors will be glad of the opportunity to subscribe. For some years the Senefelder Club, the headquarters of fine work in this country, has been endeavouring to induce English artists and English buyers to encourage the production of good English lithographs by English artists in preference to the German things forced on the market by German traders, and Mr. Anthony Barker's enterprise is a wholesome and timely contribution to the end in view. We have said many times that it is a disgrace to our educational authorities, who have flooded our schools with German lithographs of British scenes and historic episodes simply because of their cheapness; and only less so to British manufacturers who have given preference in the production of their posters and catalogues to the German bandits, whose rapacity has been as marked in art and commerce as their fiendishly barbarous murders of non-combatants, and outrages on women and children are in warfare.

One of the most lamentable features of the damage done to the Cathedral of Rheims by the Huns was the destruction of the beautiful coloured glass. It has been supposed that the secret of the composition of the glass in the cathedral had died with those who produced the glass. Many artists have striven to reproduce replicas, but failed to get the same effect of colour. At a meeting of the French Academy of Sciences, M. le Chatelier has been reading a paper written by M.

LOUGHOR, IRELAND.

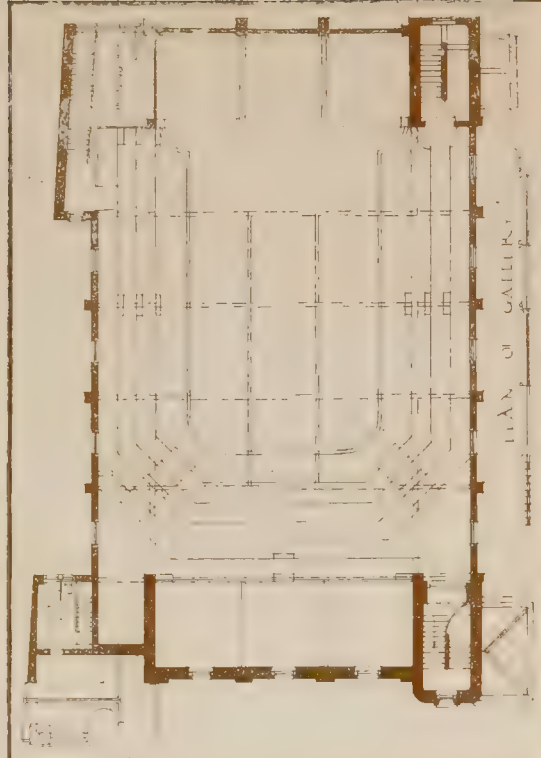
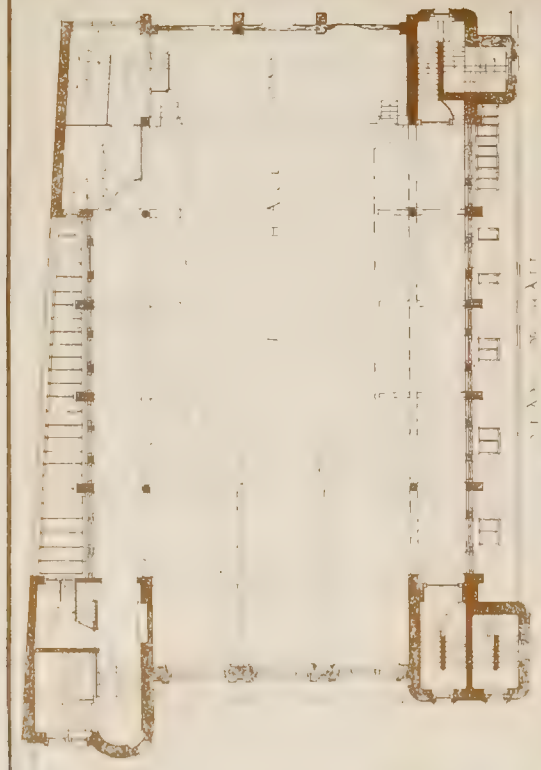


ST. MICHAEL'S CHURCH, LOUGHOR, NEAR SWANSEA: S.W. VIEW.



EXTERIOR OF NAIROBI CATHEDRAL, EAST AFRICA.







NEW TOWN HALL AND MARKET BUILDINGS FOR THE BOROUGH OF DENBIGH: SELECTED DESIGN.
Messrs. JOHN BROOKE and ELDON, Architects.

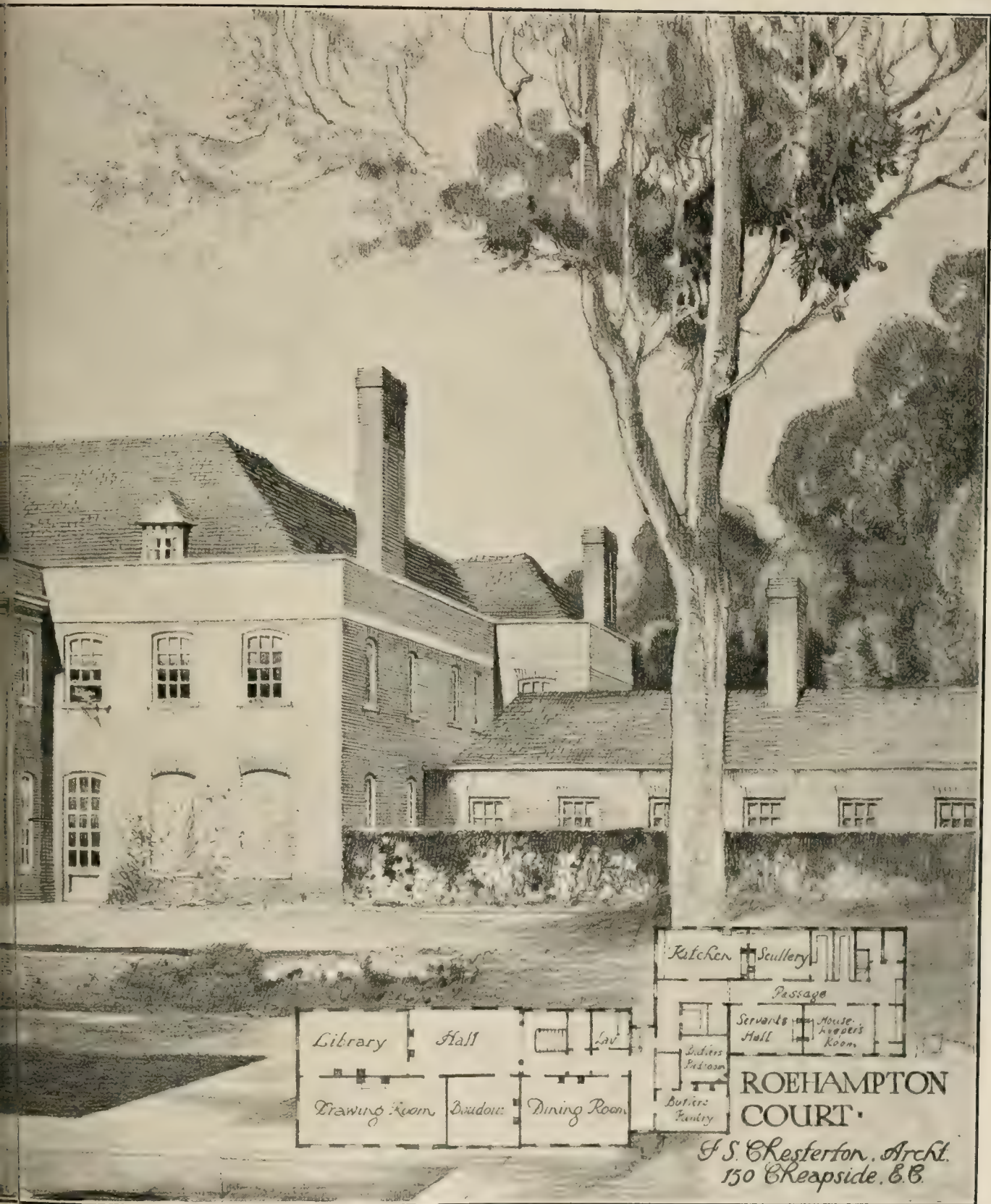


583-586,



ROEHAMPTON
Mr. F. S. CRIST

MAY 21, 1915



*J. S. Chesterton, Archt.
150 Cheapside, E.C.*

U T, S.W.
N. Architect.



Chesneau, vice-director of the School of Mines, in which hopes are held out that it will be possible to replace the glass at Rheims. Some fragments obtained from the ruins were exposed by M. Chesneau to a rigorous chemical analysis, and he thinks that he has discovered the ingredients used and their exact proportions. Let us hope that he has succeeded.

Building Intelligence.

ACTON.—Sir Arthur Blomfield and Sons are the architects of the new church of St. Thomas, Acton-vale, W., the first section of which, comprising about half of the fabric, was consecrated by the Bishop of London on Saturday last. The design comprises a nave, transepts, a side morning chapel, good vestries, and an apsidal-ended chancel with a lofty sanctus bell turret on the apex of its roof. Traceried windows of simple character are adopted. The walling is faced with red Crowborough bricks, of varied shades of colour, and stone dressings are used. The nave will be more lofty than the choir, and at the west end a timber-built bell-flèche, with a spire roof, is to be placed in the nave ridge, close to the main gable. The western porches are planned diagonally with the building. The style is Gothic. Messrs. J. Dorey and Co., of Brentford, are the builders. The total cost is estimated at about £10,000.

HENDON.—Hendon Parish Church has long been inadequate for the increasing population, and, consequently, the building has been largely extended, and has just been opened. The ancient part of the church has been restored, and on its south side have been built a new nave and chancel, and a new south aisle. The new chancel extends further eastward than the old chancel, which will now become the chapel. Against the south wall of the new aisle is a low building, containing the vestries. The south porch is at the west end of the south wall, and is carried up to the full height of the main building, to form an organ-chamber opening into the west end of the new south aisle. Behind the west wall of the old south aisle are the remains of a 13th-century lancet window, and remains of an early window. About 2ft. of the ancient south-aisle wall projects into the new nave, marking the original position. The upper doorway to a former rood-loft was found on the south side of the old chancel arch. Close to it the removal of the gallery disclosed parts of a 15th-century window, which has been built into the side of the new porch. What remained of the original roof-timbers of the old south aisle have been incorporated in the roof of the vestry building. In the west wall of the new aisle, and in the south wall of the organ-chamber, two of the 18th-century windows out of the old south wall and transept are rebuilt. They serve as records of a stage in the history of the church. The removal of the gallery in the north aisle uncovered the ancient oak roof intact, with some fine carved bosses. The new work is in the style of the 15th century. A great feature is the arcade, in white Beer stone, as used for all the internal stonework. The range of large windows in the south wall of the aisle afford ample light, and the deep reading gives mass and strength to this side of the church. There is no chancel arch, but a handsome open roof, in English oak, extends right through from end to end. The aisle also has an open oak roof, but it is flat, with carved bosses in the middle of the tie-beams. The architect, Mr. Temple Moore, F.R.I.B.A., we understand, is not responsible for the design of the new benches or choir-stalls. We illustrated the interior of the building in the BUILDING NEWS for June 24, 1914, before the work was commenced.

ST. BARTHOLOMEW THE GREAT, MITHFIELD.—On June 7 next the Bishop

of London will dedicate the choir-vestry which Sir Aston Webb, R.A., has erected on the ruined walls of the Norman South Chapel of this great church. Its site has been long hidden by the Elizabethan houses known as 6 to 9, Cloth Fair. These old buildings had become so unsanitary that a short while since they had to be pulled down, when some interesting remains of 12th- and 13th-century work were discovered, buried away as they must have been for over three hundred years. Part of the conventual choir erected about 1160 A.D., and which joined a bay of the nave, has thus been found. Various modifications of a century later are also in evidence, such as the insertion of a large window of the Lancet period. Sir Aston Webb has preserved this by getting support for the old masonry with iron bars, the stonework having been much reduced and perished. The work such as was found is, however, now properly preserved and kept intact; but the modifications made by the mediæval builders render the details of the building very varied. The aim kept in view has been to retain as much of these old portions of the structure as possible. The choir-vestry, erected at the cost of Mr. G. Duckworth Atkin, is, of course, new, but its character well befits its position, and the additions harmonise with the ancient fabric in so far as any fresh building of the sort can do. The excavations have settled hitherto undetermined questions as to Rahere's ancient chapel, built in 1123, having been one of three radiating chapels of his choir, and comprised of two apsidal sides very like the lay-out of the lateral chapels to Norwich Cathedral, or similar to others such as the chapels of the choir at Westminster Abbey.

SITTINGBOURNE.—The new Consumptives' Sanatorium that has been erected at Keycol Hill, near Sittingbourne, was publicly opened on Thursday afternoon in last week by Mr. T. Payne, J.P., C.C., Chairman of the Sittingbourne and Milton Joint Hospital Board. The sanatorium has a frontage of 350ft., with accommodation for 40 patients, 20 of each sex. There are six acres of land for recreation purposes. The Hospital Board have the right to place ten patients in the sanatorium, and the remainder will be county patients. The institution is part of the county council scheme for the provision of sanatoria. The cost has been about £4,600. The architect was Mr. W. L. Grant, Sittingbourne.

TRINITY-LANE, CANNON-STREET, E.C.—Having acquired the freehold of three adjoining properties, the Painter-Stainers' Company has commenced in Little Trinity-lane building operations which, without impairing the ancient portions of the Hall, will afford additional accommodation, and improve the front of the building. The architect is Mr. H. D. Searles-Wood, F.R.I.B.A., of the Wool Exchange. The three acquired houses, which lie between the Hall and the Metropolitan District Railway, are being demolished, together with the beadle's house at the rear. In the elevation a distinction will be made between the Hall proper and the new buildings that are to take the place of the demolished properties. The former will be stucco, and the latter built with Crowborough bricks, though there will be a common treatment of the lower portions in Portland stone. By the clearing away of a corridor and two offices, it will be practicable to enlarge the court room on the ground floor. The old stained glass will be utilised afresh. On the first floor the livery hall, dating from the 17th century, will be enlarged by an additional bay, to construct which the minstrels' gallery will be set back, and other readjustments made. The painted chamber, on the same floor, is not to be touched, save for the addition of a little space to it. The new northward block will, to a large extent, be let as offices, and opportunity will be taken for rearranging the accommodation for the company's staff.

The death is announced, at Llandysilio, of Mr. George Snook, formerly borough surveyor of Welshpool.

Correspondence.

POLITICS AND PARTY QUESTIONS AT THE R.I.B.A.

To the Editor of the BUILDING NEWS.

SIR,—I regret to learn that there are still politics and party questions disturbing our Institute, even at this time, when we should avoid all internal dissensions.

I hear that a manifesto has been issued with the object of influencing votes in the cause of a party or clique.

It is to be hoped that all members will do their duty as voters. The composition of the Council is important in the interests of architecture, and those who criticise the Institute's action, or inaction, have only themselves to blame if they have shirked their duty in electing the Council.

All members should make a point of supporting candidates on their merits, realising that men of standing and ability are the safest guardians of our art and its interests.

—I am, etc.,
ERNEST GEORGE.
18, Maddox-street, W., May 18.

"EXPULSED FROM THE ORDER."

SIR,—What ought to have been done six months ago surely can no longer wait. The days for sitting on the fence are over. By the casting vote of the President of the Institute the endeavour initiated by Mr. Max Clarke failed. The members present, when the question came up, were equally divided. The resolution, in all conscience, was mild enough, the intention being to call upon German and Austrian architects elected on the list of Honorary Corresponding Members of the R.I.B.A. to retire. I, for one, deplored the egregious remarks of the usual sentimental sort expressed on that occasion by those in favour of the status quo; but if there existed then any excuse for the burking of what appeared to me a distinct duty, none can weigh with Britishers now. Mr. Ernest Newton, actuated by the best intentions in the world, I dare say, was influenced by a misplaced spirit of charity when he expressed a laudable faith in the ultimate beneficence of Germany, speaking, as he did, of his hope in the regeneration of that land of "Kultur." Such aspirations remain still academical, and the world has learned how superficial all this sort of thing actually must be. The King, at last, representing the universal convictions of the nation, has now ordered the striking-off of enemy Knights of the Garter by way of a practical protest against the brutalities carried out on land and sea by those who stick at nothing in their endeavour to ruin our Empire. Faith, hope, and charity, all so supremely excellent, imply duties not only to those at home, but to all humanity at large, particularly for the emancipation of the weak and suffering; hence our part in this war.

Mr. William Woodward voiced this view when, in support of Mr. Max Clarke's resolution, he alluded to the ruthless tenets of the cultured propagandists among the professional and professorial classes in Germany anterior to the outbreak of hostilities; but his remarks met with no response from those who, short-sightedly, decided to let the subject drop.

The result possibly of the exclusion of these few architects from our ranks may be reckoned infinitesimal in the face of the gigantic proportions of the enormities done throughout Europe; but at least we all must do our little bit in the struggle, even if these architects are so inconsequential in their own land. In my humble opinion the Institute made a great mistake in shirking an obvious duty. Let the inevitable step be now taken without parley, and expel the individuals in question.—I am, etc.,

May 14, 1915.

F.R.I.B.A.

Second Lieutenant James Hemingway, 1st Battalion Seaforth Highlanders, reported killed on May 9, was the eldest son of Mr. Charles Robert Hemingway, J.P., Scawthorp House, Doncaster, railway contractor.

LEGAL INTELLIGENCE.

DEFECTIVE PROPERTY AT PLYMOUTH.

—At Plymouth, on Friday, Cornelius Laskey Duke, of Sun Buildings, Plymouth, was summoned for a breach of the Public Health Act, 1875, and Section 75 of the Towns Improvement Clauses Act, 1847. Mr. Heard, appearing for the corporation, said that certain tenements belonging to defendant at the rear of 38 and 40, Ashford-road, were in such a condition that notice was served upon him to remove the building. Mr. J. Paton, borough surveyor, said he inspected the premises on February 12, and came to the conclusion that they were in a ruinous state, and dangerous to neighbouring occupiers. Photographs illustrating the buildings were submitted, and the surveyor described their condition and the repairs effected, which he said were insufficient. The building ought to be pulled down. Mr. C. L. Croft, for the defence, said it was proposed to make other alterations which witness could not accept as effective remedies. Mr. E. Carder, assistant building surveyor, said the building had 9in. walls, and was falling away seven inches from the adjoining house. Rebuilding the piers and altering the foundations was simply playing with it. Notices were served on Mr. Duke. Cross-examined: Even steel-girders would not rectify it. The building was gone too far.—Mr. Croft said his client did not build the premises, and he thought the error of judgment was on the part of the authorities in passing the plans. Mr. Duke said the work he proposed to do would render the building absolutely safe.—Mr. H. Prigg, civil engineer, thought this would render it thoroughly secure, and the work was comparatively simple.—The chairman said the facts were not in dispute, although the remedy was. The Bench had no option but to make such order to put the premises in repair as would satisfy the surveyor. The order would be to take down within a month.—Mr. Croft gave notice of appeal.

ASSOCIATED PORTLAND CEMENT MANUFACTURERS (1900), LTD., v. W. CORY AND SON, LTD.—This case, in which Mr. Justice Rowlatt gave judgment in the King's Bench Division on Friday, involved a question of considerable importance to shipowners who still hold pre-War contracts. The action was brought by the Associated Portland Cement Manufacturers (1900), Ltd., against W. Cory and Son, Ltd., shipowners, to recover damages for alleged breach of contract, in respect of the carriage of cement from the Thames to Rosyth, on the Firth of Forth. Defendants pleaded "the restraint of princes and rulers" and the Defence of the Realm Act. Mr. Leslie Scott, K.C., and Mr. O'Hagan (instructed by Messrs. Leonard and Pilditch) appeared for plaintiffs; and Sir Edward Carson, K.C., and Mr. R. A. Wright (instructed by Deakin and Co.), for defendants. Mr. Leslie Scott, opening the case, said the point raised was whether a contract for the carriage of goods by sea extending over a number of years was to be held to be dissolved by reason of the present War conditions. By a contract made in 1910 the defendants undertook until December, 1916, to provide the plaintiffs with tonnage for the carriage of cement from the Thames and Medway, delivering to Messrs. Easton, Gibbs, and Sons, the contractors to the Admiralty, at Rosyth, for use on the new naval base works, at 2s. 2d. per ton. After the outbreak of war, the defendants raised the question whether they were not relieved from their obligation under the contract, and in the result the plaintiffs had to pay the defendants 7s. a ton for the carriage of a cargo of 604 tons. The plaintiffs now claimed to recover the excess freight—viz., the difference between the contract rate and the rate charged. The defendants relied mainly on the fact that a number of their steamers were requisitioned by the Admiralty, that one was detained through the War at Petrograd, and that various restrictions had been imposed by the Admiralty on navigation.—Sir E. Carson, for the defendants, said this was not a case in which the defendants were desirous of taking advantage of increased freights for the purpose of making money. They would have been willing to carry out the contract without making a penny if they had been able to do so. After the commencement of hostilities the Government took away practically one-half of the defendants' tonnage, and consequently they were protected by the provision relating to "the restraint of princes and rulers." In addition, the Government had made regulations affecting the shipping of the country, and the Defence of the Realm Act, No. 2, 1915, provided in Section 1 (2) that where the fulfilment of a contract was interfered with by the necessity of complying with any requirement, regulation, or restriction,

that necessity was a good defence to any action in respect of the non-fulfilment of the contract so far as it was due to that interference. Mr. J. G. Hamilton Greig, managing director of the defendants, stated that when the war broke out the defendants had a sufficient number of vessels to enable them to carry out their commitments. Under the Government proclamation the Admiralty requisitioned a number of the defendants' ships, but they still retained eleven. It was not possible now for the defendants to have a vessel ready to take cement to Rosyth on receiving ten days' notice. At the end of last year the defendants secured some of the interned vessels, for which they were charged 13s. 3d. per ton. Subsequently the freights fell to 7s. 6d. per ton.—Mr. Justice Rowlatt, in delivering judgment, said the question raised was whether the defendants were entitled to claim that the contract as a whole was suspended owing to the new conditions brought about by the War. As to the clause of the contract relieving the defendants of their obligation in the event of "restraint of princes and rulers," he would point out that while the defendants had been hampered by the outbreak of war the Government had not done anything to stop all the voyages by the defendants' ships. The requisitioning of a number of ships, or the making it awkward for the ships to perform the voyages, did not entitle the defendants to say that they had been prevented from performing their contract by the "restraint of princes and rulers." The Defence of the Realm Act afforded no justification for the course the defendants had taken, as it was impossible for them to contend that the restrictions imposed by the Government prevented them from fulfilling the whole of their contract. Under these circumstances, he gave judgment for the plaintiffs, with costs. Judgment entered accordingly.

ANCIENT LIGHTS IN ALBEMARLE-STREET, W.—Murray v. Agnew.—In the King's Bench Division, on Friday, before Mr. Justice Astbury, this case, which promised to be of some interest, was settled on terms. A well-known publisher sought an injunction to restrain an equally widely-famed firm of art dealers from rebuilding Nos. 3 and 4, Albemarle-street to a greater height than the premises on the same site now demolished, so as to darken Nos. 48, 50, and 50A. The Hon. Frank Russell, K.C., and Mr. Dighton Pollock appeared for the plaintiffs; Mr. Micklem, K.C., Mr. Cave, K.C., and Mr. Austen-Cartmell for the defendants. The windows of the plaintiffs' premises had remained unaltered for the last twenty years, and opposite, on the site of Nos. 3 and 4, owned by the defendants, there stood a building for the last twenty years. The average width of Albemarle-street is 47ft. 6in. The professional witnesses called included Mr. A. B. Yeates, Mr. Howard Chatfield Clarke, P.S.I., and Sir Alexander R. Stenning. After a consultation, Mr. Russell intimated that the defendants had given an undertaking that, with the exception of the chimney-stacks and dormer windows, they would not carry their building to a greater height than 56ft. 6in.—i.e., beyond the altitude from which a line drawn to the sill of the ground-floor window of the plaintiffs' premises would produce an angle of 42½deg. with their front wall. Defendants would also pay an agreed sum for plaintiffs' costs. His Lordship said it was a satisfactory settlement. He made an order embodying the undertaking and terms agreed to.

THE RATING OF FORESHORE.—Justices Channell, Scrutton, and Bailhache, sitting as a Divisional Court, recently held, on a case stated under the Quarter Sessions Act, 1849, that the Associated Newspapers, Ltd., and other occupiers of land reclaimed from the Thames at Whitefriars were liable to be assessed for the consolidated rate, but not for the police. From that decision the City Corporation appealed with regard to the police rate, and the occupiers with regard to the consolidated rate. The appeal and cross-appeal came before Lords Justices Swinfen Eady, Phillimore, and Banks, sitting as the Court of Appeal, on Wednesday week, when, after hearing the arguments of Sir Robert Finlay, K.C., Mr. Macmorran, K.C., and Mr. Konstam for the Associated Newspapers, Ltd., and Mr. George Cave, K.C., Mr. Ryde, K.C., and Mr. Boydell Houghton for the City of London Corporation, the Court dismissed the occupiers' appeal and allowed the cross-appeal of the Corporation, following in this instance the decision in the Sion College case. A conference between the Corporation and the London County Council took place at the Guildhall on the following day to consider the position created by the decision that the properties in this district are not liable to pay poor-rate. The London County Council is anxious to promote legislation to make the property liable.

PARLIAMENTARY NOTES.

REGENT-STREET QUADRANT.—Sir H. Verney (Secretary to the Board of Agriculture), replying in the House of Commons on Tuesday to Mr. A. W. Soames, said Mr. Norman Shaw's design for Regent-street Quadrant was found to be not well suited to traders' requirements, and had to be abandoned. Other designs had since been considered, the latest one by Mr. John Murray, the architect who had designed the offices now occupied by the Commissioners of Woods. Mr. Murray's design was believed to be in accordance with the recommendations of the Committee which reported on the subject, except that the roof was slightly lower.

WATER SUPPLY AND SANITARY MATTERS.

CONWAY.—At the annual meeting of the Conway and Colwyn Bay Water Supply Board, held on Friday, a letter of deep condolence was ordered to be sent to Mrs. Farrington and the family on the death of the board's engineer, Mr. T. B. Farrington, of Llandudno. A resolution was then unanimously passed appointing Mr. C. F. Farrington, son of the late engineer, and junior partner in the firm, as the board's engineer, on the same terms as those of the appointment of his late father. In thanking the board for the appointment, Mr. Farrington submitted a report on the proposed new bridge to carry the 15in. main over the Conway at Dolgarrog, which is necessary to replace the pipes laid in the bed of the river.

The resignation is announced of Mr. J. B. Fayers, building surveyor to the Watford Urban District Council.

Owing to the Local Government Board not being able to promise the authorisation of a loan of £10,000 for the purpose, the Clutton Rural Council have decided to postpone their scheme for supplying water to six parishes in their area.

The Local Government Board has sanctioned an increase in the salary of Dr. S. Davies, medical officer of health for the Metropolitan borough of Woolwich, from £600 to £650 a year from December 2, 1914, and to £700 a year from October 1, 1915.

News was received at Shrewsbury on Friday of the death of Lieutenant John Turner Clough Hazledine, of the Royal Fusiliers. Lieutenant Hazledine, who joined the Territorial Force at the beginning of the War, was a land agent and surveyor, and was unmarried.

The new Agricultural Hall which has been erected by the Maidstone Corporation in the Lock Meadow was opened on Wednesday week. The new building, which has cost nearly £4,000, is 180ft. long and 70ft. wide, and has a total area of nearly one-third of an acre. It was designed by the borough surveyor, Mr. T. F. Bunting, and built by Mr. W. T. Burrows, of Hedley-street, Maidstone.

A verdict of "Death from natural causes" was returned at an inquest at Hampton-on-Thames on Saturday on the body of Mr. Edward Mann, seventy-six, an artist, who has exhibited at intervals since 1867 at the Royal Academy, and who died in his sleep on Wednesday night. Mr. Mann was an old-age pensioner and in receipt of an annuity of £15 per annum from the Artists' Benevolent Institution. He had had a University education, but had, with increasing years, fallen into poverty.

The Fitzwilliam Museum Syndicate of Cambridge University have issued a report dealing with the proposed extension of the museum which the Marlay bequest has made possible. The building will form the northern side of the future quadrangle. It is suggested that the Marlay wing be built of brick, with plinth cornice, and other dressings of Portland stone. The syndicate recommend that a general approval be given to the plans prepared by Messrs. Smith and Brewer, of Queen-squart Bloomsbury.

At the meeting on Monday of the town council of Shrewsbury a letter was received from Messrs. Alley and MacLellan, engineers, Glasgow, who are building large works at Shrewsbury for Government contracts, stating that they are unable to obtain sufficient houses in the borough for the skilled hands they proposed to bring with them from Glasgow, and that, unless they were able to find the required number of houses, important Government work would be hampered. The mayor expressed the hope that new houses would be erected by private enterprise, in addition to seventy which the council contemplated erecting under the second housing scheme.

Our Office Table.

A meeting was held at the Great Eastern Hotel, Liverpool-street, E.C., on Wednesday afternoon, under the presidency of Lord Aberconway, at which it was decided to form an association to promote, in the interest of industrial art, co-operation between designer, manufacturer, and distributor, with offices at 6, Queen-square, Bloomsbury. In a letter expressing inability to be present, Sir H. Llewellyn Smith urged that the promoters of the movement should endeavour to establish the association on a broad and catholic basis. The present condition of industrial design and handicraft, and the best means of improving it by State action, was under the joint consideration of the Board of Trade and the Board of Education when the War broke out, and, but for the interruption, a scheme would now be in operation. The formation of the association would be a valuable preparation for anything that might be attempted on a national basis hereafter. The Chairman remarked that Sir Llewellyn Smith's letter showed that the movement was one that the Government felt to be of such importance that they were prepared to lend help towards a national scheme. A resolution proposed by Mr. J. Marshall, declaring the desirability of establishing an association of manufacturers, designers, and distributors and others interested in stimulating a national spirit of co-operation, which was becoming more and more a vital necessity for our industrial life, and that it should be called "The Design and Industries Association," was carried with practical unanimity. Sir Cecil Smith tendered the association, on behalf of the Education Department, a welcome and a hearty wish for its success. A provisional committee was nominated.

Mr. Robert A. Pott, of Manchester, writes that at an interview last week with the officials at the headquarters in London of the National Insurance Commission he was definitely informed that although the time-limit for valuation has almost expired, there is to be no valuation this year. One of the main reasons is that it is not possible owing to the great number of members who have joined the Army. The date of the first valuation is not fixed, nor will it be for some time. Section 36 of the National Insurance Act fully empowers the Commissioners to fix the date. It states that the valuation shall be made "at the expiration of every three years, dating from the commencement of this Act, or at such other times as the Insurance Commissioners appoint." This section seems to have been generally overlooked.

Hurstmonceux Castle, built in the reign of Henry VI., one of the most famous ruins in the South of England, is now in process of restoration and rebuilding. Lieutenant-Colonel Claude Lowther, the present owner of the castle, is adding a chapel and a wing to the banqueting-hall—66ft. by 33ft. The ceiling of the hall is to be an exact replica of the roof of Crosby Hall, one of the finest examples of Tudor architecture in England. Colonel Lowther recently bought the whole of the old wall at Robertson's Hill, Hastings, which is believed at one time to have formed part of Hastings Castle. These remains are to be used in the rebuilding of the banqueting-hall, and will shortly be removed from Hastings for that purpose.

A South-Eastern Sectional Conference on Arterial Roads in Greater London was held on Wednesday at the Local Government Board Offices, Whitehall, Mr. G. H. Hume, Chairman of the Highways Section, London County Council, presiding. Resolutions passed by the sub-committee were submitted and considered, which emphasised the urgency of at once fixing the lines of the approved routes, a great deal of open land being now available. This is in danger of being built on and the routes blocked. The proposed new roads in this section are from Old Kent-road to Catford, a by-pass at Bromley to avoid the congested High-street and to join the road to New Cross, and

another by-pass at Eltham, the Investigation Committee being agreed as to the route from Maidstone-road to a point south of Eltham Station. It is proposed that the South Circular-road should join the Well Hall-road north of Well Hall Station, passing to Eltham Green and across Horn Park to the eastern end of St. Mildred's-road. The committee attached great importance to the early construction of this portion of the road. The recommendations of the sub-committee were generally approved. The Conference, after some discussion, adopted a resolution that powers should be given to county councils after consultation with the local authority concerned to prescribe building lines to existing roads, subject to an appeal to the Local Government Board.

Mr. Fanindra Nath Bose, a native of Bengal, who entered the Royal Institution School of Art, Edinburgh, as a student in 1905, and has since been a distinguished student of the Edinburgh College of Art, sailed for India on Saturday last. Mr. Bose, who gained the diploma in 1911, and was awarded a travelling scholarship of £100, proved himself, in view of the director of the college, an exceptionally brilliant student of sculpture, and his work was highly commended by Sir George Frampton, R.A., and Sir W. Goscombe John, R.A. He has now, on the recommendation of Sir Goscombe and Mr. Spielmann, been appointed sculptor to the Gaekwar of Baroda. Under a signed agreement Mr. Bose is to receive an annual salary of £250 and a studio and workshops at Baroda. He is to execute for the Gaekwar a series of bronze figures of national historical personages of Baroda, for each of which he is to be paid £270, and at the same time he is to be free to undertake other commissions. He is also to act as advisor to the Gaekwar for the technical schools in Baroda, where it is intended to develop bronze-casting.

The report of the Sun Insurance Office was submitted at the annual general meeting on June 2, and is of the usual solidly satisfactory character. The balance brought forward from last year was £500,923 7s. 11d., and there was paid for dividends in respect of 1913 £158,200, leaving a credit balance of £342,723 7s. 11d. This, by the operations of the year, has been increased to £585,112 12s. 4d. There has been carried to pension fund £10,000, to a War contingency fund £10,000, to an investment suspense fund £75,000, and to writing down sundry investments £75,000, making £170,000, and leaving at credit, as appears in the balance-sheet, £415,112 12s. 4d. An interim dividend of seven shillings per share, less Income-tax, was paid in January last, absorbing £78,400, and the directors have now declared a further dividend of seven shillings per share, less Income-tax, payable on July 2, which will absorb a further sum of £76,650, making £155,050, and leaving unappropriated £260,062 12s. 4d. The total funds of the office will then stand at £3,324,985 9s.

The Mont d'Or Tunnel and the Frasnè-Vallorbe Railway, of which it forms a part, were opened to traffic on Saturday, and the first international train between Paris and Switzerland passed through. The Frasnè-Vallorbe line, which is double track and rather over 15 miles in length, branches off at Frasnè station from the old Dijon-Pontarlier route, running almost direct from north-west to south-east, and greatly shortens the journey between Dijon and Lausanne, and hence that between Paris and Rome. Besides the Mont d'Or Tunnel, which is nearly 3½ miles long, and almost all in French territory, there are four other shorter tunnels in the line, which has been difficult to construct, not only because of the water-bursts in the Mont d'Or Tunnel, but also because it runs through peaty, boggy land near Frasnè. Vallorbe station has been rebuilt by the Swiss Federal Railways Co., at a cost of £300,000. The entire outlay on the new link has exceeded £1,500,000.

A new isolation block at the infirmary, Bury, Lancs., has been formally opened.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY (TO-MORROW).—Geologists' Association. Excursion to St. Leonards. Train from Cannon-street, 9.25 a.m.

FRIDAY (MAY 28).—Institution of Municipal and County Engineers. Meeting at the Council Offices, Nantwich. "Municipal Works in Nantwich," by J. Brooke, Engineer. 11.30 a.m.

Royal Institution. "Engineering Problems of Mesopotamia and the Euphrates Valley," by Sir John Jackson, C.V.O., M.P. 9 p.m.

SATURDAY (MAY 29).—Institution of Municipal Engineers. Meeting of the Eastern, North-Eastern, and South-Eastern Districts at Dunstable. 1.30 p.m.

Association of Managers of Sewage Disposal Works. Visit to the Corporation Sewage Works, Durnsford-road, Wimbledon. 3 p.m.

Mr. Josiah Southron, of St. Valerie, Avenue-road, Leamington, retired auctioneer and house agent, who died on March 13, aged seventy-three, left estate valued at £59,727 gross.

Messrs. Nobel's works at Irving have extended so much, owing to the War, that they contemplate the erection of 750 houses for their employees, 247 of which will be commenced as soon as the necessary labour can be got.

Mr. William Wilson, factor for Sir John Wilson, Bart., of Airdrie, has been appointed factor for the Douglas estates of the Earl of Home, K.T. Trained in the Linlithgow county clerk's office, Mr. Wilson was for many years in charge of the estate factoring department of Messrs. Dundas and Wilson, W.S., Edinburgh.

As an agreed measure, the Housing (Rosyth Dockyard) Bill passed first, second, and third readings in the House of Lords on Wednesday afternoon, and later in the day received the Royal Assent. The measure gives to the Local Government Board for the Rosyth area more ample powers than any comprised in the Housing and Town-Planning Act.

Messrs. Patman and Fotheringham, Ltd., 100 and 102, Theobald's-road, Bloomsbury, and also of Park-street, Islington, have secured the following contracts: New warehouse, York-road, Wandsworth, S.W., for the Vacuum Oil Co., Ltd.; new premises, Drury-lane, W.C., for Messrs. Watkins and Simpson, Ltd.; and the London Jewish Hospital, Stepney Green, Stepney, E. (first portion).

Intimation has been received by the Faculty of Surveyors of Scotland from the Secretary to the Treasury that in future the passing of the examinations of the Faculty of Surveyors of Scotland shall be regarded equally with the passing of the examinations of the Surveyors' Institution as affording *prima-facie* evidence of suitability for appointment to permanent positions under the Government.

The town council of Stamford recently accepted the tender of a Mr. Brown at £3,975 for building workmen's dwellings. Considerable delay took place, and Mr. Brown intimated that he could not now undertake the work except at an addition of £300 to the contract. The next lowest tender was for £4,075. At the last meeting of the town council the facts were reported, and it was decided to readvertise the contract.

The Wotton-under-Edge Parish Council having applied to the Local Government Board for consent to borrow £1,300 for the provision of a burial ground, a public inquiry was held at the town hall on Monday evening by Mr. R. H. Bicknell, M.Inst.C.E., an inspector of the Board. Mr. A. V. Lawson, the architect who had prepared the plans for laying out the grounds and for the buildings, was in attendance.

The Wigan Council have adopted, and will carry out after the War, a housing scheme which will embrace the construction of a small garden city, with bowling-green, children's playgrounds, and foliage plots. Thirty-four houses will be commenced as soon as possible out of one hundred suggested by the Local Government Board. Other sites will be secured as the scheme develops, as there is a great shortage of workmen's dwellings in Wigan.

A new branch library, the twenty-fourth established in Manchester, was opened on Saturday on a central site in Didsbury. The building, which has been designed by the city architect (Mr. H. Price), is in Fifteenth Century Gothic style, with traceried windows, and there are distributed over the building emblems of Science, Knowledge, Literature, Music, and the Arts and Crafts in stone. The cost, £5,000 has been borne by Mr. Andrew Carnegie. The library opens with about 8,000 books.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

Owing to stoppage of supplies, all prices have advanced an average of 15 per cent.

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£9 12 6 to	£9 17 6
Wrought-Iron Girder Plates	9 15 0 "	10 0 0
Steel Girder Plates	9 15 0 "	9 17 6
Bar Iron, good Staffs	6 5 0 "	8 10 0
Do., Loomfoot, Flat, Round, or Square	22 0 0 "	0 0 0
Do., Welsh	5 15 0 "	5 17 0
Boiler Plates, Iron—		
South Staffs	8 0 0 "	8 15 0
Best Smedshill	9 0 0 "	9 10 0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s. to £9. Ditto galvanised, £14 to £15 10s. per ton

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 10 0	14 0 0

	Per ton.	Per ton.
Cast-Iron Columns	£6 17 6 to	£8 10 0
Cast-Iron Stanchions	6 17 6 "	8 10 0
Rolled-Iron Fencing Wire	8 5 0 "	8 10 0
Rolled-Steel Fencing Wire	7 5 0 "	7 10 0
Galvanised	8 15 0 "	9 5 0
Cast-Iron Sash Weights	6 0 0 "	6 5 0
Cut Floor Brads	10 15 0 "	—
Corrugated Iron, 24 gauge	16 0 0 "	—
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14 5 0 "	—

B.B. Drawn Telegraph Wire, Galvanised—
0 to 8 " 10 " 11 " 12 " B.W.G.
£10 10s. £10 15s. £11 0s. £11 5s. £11 10s. per ton.

	Per ton.	Per ton.
Cast-Iron Socket Pipes—		
3in. diameter	£6 15 0 to	£7 3 6
4in. to 6in.	6 10 0 "	6 12 6
7in. to 24in. (all sizes)	6 17 6 "	7 2 6

[Coated with composition, 5s. 0d. per ton extra. turned and bored joints 5s. per ton extra.]

	Per ton.	Per ton.
Iron—		
Cold Blast, Lillieshall	80s. 0d. to	127s. 6d.
Hot Blast, ditto	87s. 0d. "	97s. 0d.

	Per ton.	Per ton.
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—		
Gas-Tubes	67½ p.c.	—
Water-Tubes	63½ "	—
Steam-Tubes	60 "	—
Galvanised Gas-Tubes	55 "	—
Galvanised Water-Tubes	51½ "	—
Galvanised Steam-Tubes	45 "	—

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	£25 10 0 to	—
" " Country	26 10 0 "	—
Lead Barrel Pipe, Town	26 10 0 "	—
" " Country	27 10 0 "	—
Lead Pipe, Tinned inside, Town	27 10 0 "	—
" " Country	28 10 0 "	—
Lead Pipe, Tinned inside and outside, Town	30 0 0 "	—
" " Country	31 0 0 "	—
Composition Gas-Pipe, Town	28 10 0 "	—
" " Country	29 10 0 "	—
Lead Soil-pipe (up to 4in.) Town	28 10 0 "	—
" " Country	29 10 0 "	—

[Over 4in. £1 per ton extra.]

Lead, Common Brands	17 17 6 "	£18 12 6
Lead Shot, in 28lb. bags	24 15 0 "	—
Copper Sheets, sheathing & rods	100 0 0 "	101 0 0
Copper, British Cake and Ingot	80 0 0 "	89 0 0
Tin, English Ingots	166 0 0 "	167 0 0
Do., Bars	167 0 0 "	169 0 0
Pig Lead, in 10wt. Pigs (Town)	20 2 6 "	21 2 6
Sheet Lead, Town	25 0 0 "	—
" " Country	26 0 0 "	—
Genuine White Lead	34 0 0 "	—
Refined Red Lead	31 0 0 "	—
Sheet Zinc	75 0 0 (net)	—
Old Lead, against account	19 0 0 "	—
Tin	9 0 0 "	—
Cut nails (per cwt. basis, ordinary brand)	0 11 0 "	—

* For 5 cwt. lots and upwards.

SLATES.

	in.	in.	£ s. d.	per 1,000 of
Blue Portmadoc	20	10	12 6	6 1,200 at r. stn.
" "	16	8	5 12 6	" "
Blue Bangor	20	10	13 2 6	" "
" "	20	12	13 17 6	" "
First quality	20	10	13 0 0	" "
" "	20	12	13 15 0	" "
" "	16	8	7 5 0	" "
Eureka unfading green	20	10	15 17 6	" "
" "	20	12	18 7 6	" "
" "	16	8	13 5 0	" "
" "	16	8	10 5 0	" "
Permanent Green	20	10	11 13 6	" "
" "	16	8	9 12 6	" "
" "	16	8	6 12 6	" "

BRICKS.

(All prices net.)

First Hard Stocks	£1 15 0	per 1,000	alongside, in
Second Hard Stocks	1 11 0	"	" driver.
Mild Stocks	1 9 0	"	"
Picked Stocks for			" delivered
Facings	2 5 0	"	at rly. stn.
Flemons	1 14 0	"	"
Pressed Wire Cuts	1 18 0	"	"
Red Wire Cuts	1 14 0	"	"
Best Fareham Red	3 12 0	"	"
Best Red Pressed			"
Ruabon Facing	5 0 0	"	"
Best Blue Pressed			"
Staffordshire	3 15 0	"	"
Ditto Bullnose	4 0 0	"	"
Best Stourbridge			"
Firebricks	4 0 0	"	"
2½in. Best Red Ac-			" (Net, delivered in
crington Plastic	4 10 6	"	full truck loads
Facing Bricks			in London.
3½in. Acrrington Best Red Plastic Facing	per 1,000		
Bricks	£2 10 0		
3½in. ditto Second Best Plastic ditto	2 2 6		
Ditto Ordinary Secondary Bricks	1 11 3		
Ditto Plastic Engineering Bricks	1 17 6		
Sewer Arch Brick not more than 3½in			
thickest part	2 0 0		
3½in. Chimney Bricks fit for outside work	2 6 0		
3½in. ditto ditto through and through	2 0 0		
3½in. Beaded, Oval, and Bevel Jamb; Octa-			
gons; 2½" and 3" radius Bullnoses; Stock			
patterns	3 7 6		
Acrrington Air Bricks, 9" x 3 course deep, each	0 0 6		
Ditto ditto 9" x 1 course	0 0 3		
Acrrington Camber Arches:—			
3 course deep, 4½" soffit, per foot opening	0 1 3		
4 ditto 4½" ditto ditto ditto	0 1 8		
5 ditto 4½" ditto ditto ditto	0 2 1		
6 ditto 4½" ditto ditto ditto	0 2 6		
3 ditto 9" ditto ditto ditto	0 2 1		
4 ditto 9" ditto ditto ditto	0 2 11		
5 ditto 9" ditto ditto ditto	0 3 6		
6 ditto 9" ditto ditto ditto	0 4 6		

Net free on rail, or free on boat at works.

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

	White, Ivory, and	Best.	Buff, Cream, Other	Second
Salt Glazed.				
Best.	Seconds.	& Bronze.	Colours.	Colours.
Stretchers—				
12 7 6	10 17 6	6	13 17 6	6
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 17 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—				
17 7 6	15 7 6	21 17 6	24 7 6	17 7 6
Plinth and Hollow Bricks, Stretchers and Headers—				
5d. each	4d. each	6d. each	6d. each	5d. each
Double Bullnose, Round Ends, Bullnose Stops—				
5d. each	4d. each	6d. each	6d. each	5d. each
Rounded Internal Angles—				
4d. each	3d. each	5d. each	5d. each	4d. each

MOULDED BRICKS.

Stretchers and Headers—				
8d. each	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—				
1½ each	1½ each	1½ each	1½ each	1½ each
Sill Bullnose, Stretchers, and Headers—				
5d. each	4d. each	6d. each	6d. each	5d. each
Majolica or Soft Glazed Stretchers and Headers				Per 1,000
"				£22 17 6
"				Quoins and Bullnose
"				27 17 6

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours

Camber arch bricks, any kind or colour, by 4½in. 1s. 2d. each. by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

Thames Sand 7 6 per yard, delivered

Pit Sand 7 0 " "

Thames Ballast 6 0 " "

Best Portland Cement 36 0 to 41 0 delivered

Ground Blue Lias Lime 21 6 per ton delivered

Exclusive of charge for sacks.

Grey Stone Lime 13 6 to 14 0 delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

STONE.*

Red Mansfield, in blocks	per foot cube	£0 2 4
Darley Dale, ditto	"	0 2 3
Red Corsehill, ditto	"	0 2 2
Closeburn Red Freestone, ditto	"	0 2 0
Ancestor, ditto	"	0 1 10
Greenshill, ditto	"	0 1 10
Beer, ditto	"	0 1 6
Chilmark, ditto (in truck at		
Nine Elms)		0 1 10½
Hard York, ditto	"	0 2 0
Do. do. 6in. sawn both sides,		
landings, random sizes	per foot sup.	0 2 8
Do. do. 3in. slab sawn two		
sides, random sizes	"	0 1 3

* All F.O.B. London.

Bath Stone, delivered on road	£ s. d.	
waggons, Paddington Depot per foot cube	0 1 7½	
Ditto, ditto, Nine Elms Depot	0 1 9½	
Beer Stone, delivered on rail	"	
at Seaton Station	0 1 1	
Ditto, delivered at Nine Elms	"	
Station	0 1 7½	
Portland Stone, in random blocks of 20ft. average—		
Delivered on road waggons	Brown	White
at Paddington Depot,	Whit Red.	Base Red.
Nine Elms Depot, or	Per foot cube.	
Pimlico Wharf	£0 2 3	£0 2 4½

TILES.

	s. d.	Divrd. at
Plain red roofing tiles	42 0	per 1000 ry. sn.
Hip and Valley tiles	3 7	per doz.
Broseley tiles	50 0	per 1000
Ornamental tiles	52 6	"
Hip and Valley tiles	4 0	per doz.
Ruabon red, brown, or brindled		
ditto (Edwards)	57 6	per 1000
Ornamental ditto	60 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 0	"
Selected " Perfecta " roofing		
tiles: Plain tiles (Peake's)	46 0	per 1000
Ornamental ditto	48 6	"
Hip tiles	3 10½	per doz.
Valley tiles	3 4½	"
" Rosemary " brand plain tiles	48 0	per 1000
Ornamental tiles	50 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 8	"
Staffordshire (Hanley) Reds or		
brindled tiles	42 6	per 1000
Hand-made sand-faced	45 0	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"
Hartshill " brand plain tiles,		
sand-faced	45 0	per 1000
Pressed	42 6	"
Ornamental ditto	47 6	"
Hip tiles	4 0	per doz.
Valley tiles	3 6	"

OILS.

Rapeseed, English pale, per tun	£38 15 0	to £39 5 0
Ditto, brown	26 15 0	" 27 5 0
Cottonseed, refined	29 0 0	" 30 0 0
Olive, Spanish	39 10 0	" 40 0 0
Seal, pale	21 0 0	" 21 10 0
Cocunut, Cochin	46 0 0	" 46 10 0
Ditto, Ceylon	42 10 0	" 43 0 0
Ditto, Mauritius	42 10 0	" 43 0 0
Palm, Lagos	32 5 0	" 33 5 0
Ditto, Nut Kernel	35 0 0	" 35 10 0
Oleine	17 5 0	" 19 5 0
Sperm	30 0 0	" 31 0 0
Lubricating, U.S.	0 7 0	" 0 8 0
Petroleum, refined	0 0 6½	" 0 0 6
Tar, Stockholm	1 6 0	" 1 10 0
Ditto, Archangel	0 19 6	" 1 0 0
Linseed Oil	0 2 10	" —
Baltic Oil	0 3 2	" —
Turpentine	0 3 0	" —
Putty Genuine Linseed		
Oil	per cwt.	0 10 0
Pure Linseed Oil		
"Stority" Brand	0 9 0	" —

GLASS (IN CRATES).

English Sheet Glass: 15oz.	21oz.	26oz.	33oz.
Fourths	4d. 5d.	5d. 6d.	6d. 7d.
Thirds	4d. 5d.	5d. 6d.	6d. 7d.
Fluted Sheet	5d.	6d.	—
Hartley's English Rolled	3in.	3½in.	4in.
Plate	3½in.	3d.	4d.
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TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the Editor of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

* Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits, on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

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A. S. M.—Yes.

Q. S.—Thanks, no.

W. H. M.—Yes, if brief.

MIRK.—Too long, and too purely ecclesiastical.

DISCRE.—The case you quote has, in our

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AND ENGINEERING JOURNAL.

Effingham House,

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CHANGE OF DAY OF PUBLICATION.

On and after Wednesday, June 9, the BUILDING NEWS will be published every week on Wednesday morning, at the usual hour, instead of on Friday.

At the moment the reason for the change is urgent. Owing to the interruption in traffic, we receive every week complaints from readers who cannot get their paper on Fridays owing to delay in transit.

But when quiet times come again we shall, in all probability, continue to publish on Wednesday. There are many reasons in favour of the change, not the least being the growing disposition to regard the Saturday as a *diebus non* as far as business is concerned.

In any case, no one will suffer disadvantage if our readers and advertisers will make a note that all matter for publication, and advertisements, must reach us for the current issue in future by 3 p.m. on Tuesdays instead of Thursdays.

CHINESE ART AT THE BURLINGTON FINE ARTS CLUB.

Much water has passed under the bridge since the exhibition of Chinese Art in general at the Burlington Fine Arts Club in 1878. Probably in no other section of the world of art has the attitude of its leaders so changed. In some measure it was not without reason that many then, while frankly admitting the perfection of the craftsmanship, were inclined to view with more curiosity than admiration the "bizarre and exotic eccentricities" of the Far East. The truth is that what passed in Western Europe for Chinese Art thirty or forty years ago was the product of a period of stereotyped formalism which had practically killed out the art life of the nation. It is quite different to-day. In great measure the change is due to Sir Aurel Stein, whose travels opened all our eyes to the beauty of early Chinese art, and we are glad to learn that a considerable portion of his collection is to remain in England. Other causes, doubtless, have contributed. The vast political changes have released some of the contents of the native collections; the burrowing of railway enterprises and similar undertakings has unearthed from numerous cemeteries many objects which have been eagerly competed for by European and American collectors; and although the Exhibition is less rich in the earlier types than might be wished, it is sufficiently so to convince all visitors of the novelty and beauty of the early art of China in endless novel forms of Chinese art, and to elicit admiration, less perfrigid, but perhaps more genuine, than the hysteria which they

have induced in some of our French and American friends.

Till recently the ancient bronzes and jades, and the less ancient though fairly old paintings, have practically engrossed the attention of Chinese antiquarians and collectors. The bronzes, indeed, have fully merited all the attention they have received. The origin of the art is lost in the dim mists of antiquity. The Hsia dynasty, the first really historic house of China, was founded in 2205 B.C. by Ta Yu (Yu the Great), who, it is said, had the tribute metal from his nine imperial provinces cast into nine bronze "ting," or three-footed cauldrons. For nearly two thousand years these nine "ting" were preserved as palladia of the kingdom, disappearing only in 333 B.C., it is said, during the troublous times leading up to the fall of the third dynasty, the Chou. In 219 B.C. Shih Hang, first ruler of the succeeding Ch'in dynasty, made an attempt to fish them up out of the waters of the Su River, into which they had been thrown. One was actually hauled up into view, when a dragon is said to have appeared, and, biting through the rope by which the cauldron was suspended, caused it to fall back again; after which all further attempts at the recovery of it or its fellows were superstitiously given up. Despite tradition as to the very early origin of the art of bronze-casting, no concrete examples exist to support it. Of the bronzes actually extant no single piece has ever been attributed to a period earlier than the Shang dynasty (1766 to 1123 B.C.). Even undoubted Shang bronzes are excessively rare, the majority of the surviving ancient examples dating from the succeeding dynasties of Chou, Ch'in, and Han.

A feature of the more ancient bronzes which renders them in Chinese eyes highly attractive subjects for collection and archaeological study is the value of the inscriptions which a large proportion of known pieces bear—generally cast in with the original formation of the object, but sometimes engraved with burin or chisel as one of the processes of finishing-off the raw casting. Inscriptions in raised characters (done, of course, in the casting process) date, it would appear, from the Han dynasty only. An ancient Chinese bronze newly rescued from its centuries-long burial in the earth, is frequently found to be more or less thickly coated with a somewhat friable incrustation of a general greyish-green colour. This patina is produced, and solely produced, by the natural chemical action of the soil of China, charged, as it often is, with nitre and chloride of ammonium, upon the surface of the alloy. The rougher and softer outer portion of this may be removed by

abrasives, such as fine wire brushes or emery powder. This outer surface removed, the true, hard inner patina is reached, which, being lightly waxed and polished, reveals unsuspected beauties of colour, often with patches of a rich, dark blue, a deep red, or malachite green, on a general brownish-green or greenish-brown ground. This hard inner patina fortunately represents only a chemical change in the surface of the alloy, and, therefore, does not obscure or destroy the fine low-relief diaper which frequently forms the background of the chief ornament. The original surface actually exists intact, merely lying perdu, even in those cases where the taste of the possessor has allowed the inner patina to remain encrusted here and there in thick patches of malachite (which is a protoxide of copper).

The qualities distinguishing the best work of the pre-Han period, roughly before 200 B.C., are breadth of design and a general impression of monumental dignity and stateliness. Furthermore, the elements of the relief design should be essentially logical and intelligible, perfectly formed, and cast to the last detail. If the main portions of the ornament are raised above a general groundwork of fine fret or of strap-work diaper founded on conventionalised animal forms, the higher relief should not be too high (that is a sure sign of Han or later work), nor should the low relief be so emphasised as partially to throw the other into the shade. The oldest Chinese bronzes, and indeed the most ancient of all products of Chinese art known to us from actual examples, are the vessels and implements used for religious sacrifices in the ritual worship of ancestors. And there is little question that the most ancient of all the types of sacrificial bronzes is the "ting," a bowl-shaped vessel supported on three legs, and having two upright loop-handles on or near the rim. The body is, however, sometimes of rectangular form, in which case it has four legs. The circular "ting" may have a cover, with either a flattened knob or else three small loops or figures of sacrificial animals ("san-hsi ting"), permitting it to stand securely when reversed and serving as a dish. Two somewhat divergent types of the circular "ting" are seen in Nos. F 6 and 7. The covered "ting" with three loops is represented by No. G 28, and the "san-hsi ting" by No. H 12, an archaistic miniature of the later epoch. No. F 8 shows an interesting version of the circular type, the body being trilobate below and merging into the legs. The incense or perfume burners of later times were very commonly modelled on the lines of the ancient "ting," as will be seen in No. G 7, and especially in several of the objects in jade and other hard stones

exhibited here. Next in importance to the "ting," which was used for boiled grain, are the sacrificial wine-jars denominated "tsun." Their shapes are very diverse, and Nos. F 3, 25, 29, G 1, 10, 14, 24, and H 21, would all be given this name in Chinese catalogues. Several of the shapes, it will be seen, take fanciful animal or bird forms, and become wine-pourers or ewers rather than mere jars. Much resembling the more vase-like type of "tsun" are the "lei" and the "hu," under which names Nos. F 22, H 6, 7, 19, J 3, 5, and No. 3 above Case A, might be variously grouped as far as their shape is concerned. The term "i" denotes a well-defined type of sacrificial bowl, with rounded body supported on a low, spreading ring-foot, and having an expanded lip and two bold lateral loop-handles of dragon-head form. No. F 4, an archaistic Sung piece, with the characteristic inlay of gold and silver, illustrates the shape of this class of vessel. Another well-known type of sacrificial wine-vessel, represented by what is perhaps the finest and most striking bronze in the whole Exhibition (No. G 3) is the "yu," a jar, generally of oval section, of which the essential features are the knobbed cover and the arching swing-handle. The "chio," a small, helmet-shaped cup on three curved spikes for legs, was used for warming wine before pouring it in libation. The type is well represented by No. H. 1, which unfortunately lacks one of the two knobs by which the cup could be lifted, when hot, by means of a forked rod passed under them. It is regretted that no example of the "ku," of whatever date in bronze, has been secured for display. This class of wine-vessel, often called by the English name of "beaker," is, in effect, the most graceful of all the ancient types, with its flaring trumpet mouth, short slender body, and bold, spreading foot. The beautiful agate vase, No. E 17, will give a good impression of the shape of the "ku," which may, however, be of square section. The bronze No. G 10 would at first sight appear to belong to this group; but its greater proportional diameter marks it out as one of the many types of "tsun" above referred to. The "tui," a bowl for sacrificial cereals, is like a larger version of the "i" already described, but generally has an incurved lip and a cover surmounted by a cupped knob, which would act as a foot when reversed. The ring-foot, moreover, is raised on three low supports, generally shaped as dragon-heads; or else the object is cast in one with a massive rectangular pedestal, as in the case of No. G 32. Another vessel for holding boiled cereals in religious services was the "fu," a sort of oblong trough with sloping sides, two dragon-head loop-handles, and a spreading foot with the centre of each side cut away. The example of No. G 22 has a cover which is almost identical with the body, and could, when reversed, be used for the same purpose. The very graceful covered bowl on tall foot, No. G 11, used for sacrificial meat and grain, is called "tou." The "p'u" is a similar vessel, but has an openwork foot and cover of graceful design (No. H 10). An important group, denominated "hsien," is illustrated in No. J 6, a boiler, or rather steamer, for cooking greens and cereals for sacrificial purposes. The swelling portions of the three legs form a common hollow to hold water, and are separated from the body of the vessel by a pierced grid (wanting in the present case) to admit the steam. The "li" is a vessel of similar use but lighter make, with the upper part reduced to a minimum. A sort of kettle-shaped vessel used for spiced beverages is termed "huo." One type of this resembles a "li" with cover, spout, and lateral loop-handles; another is of squat circular form, with the arching loop-

handle, the knob or knobs on the flat cover, the spout and the three feet all of dragon, "phoenix," or other animal form. Nos. G 27 and H 8, although of comparatively late date, are both to be classed as "huo," in so far as their shape is concerned. No. G 5 represents, in very plain form, the "i" or ewer for ceremonial washing of the hands. The cover, here provided with a single animal head, more often has one at each end, and the horns or ears of these act as feet when the cover is reversed to form a basin. The foregoing descriptions comprehend the chief types of vessels used in the pre-Buddhistic worship of ancestors. Other important groups of objects anciently cast in bronze include bells for religious and military purposes (two military "hu-shun" or "tiger-gongs" are shown on the central pedestal), large war-drums (of which a fine specimen is shown), and various military weapons and heads of agricultural implements (see examples in Cases F, G), small objects such as spear-butts, weights for grave-clothes, and water-droppers for the writer's table, and hand-mirrors (see especially Nos. M 1 to 9, and those in Cases F and G). The mirrors, which are commonly circular, but sometimes square or with lobed edge, are always provided with a pierced knob in the centre of the relief design which decorates the back. A short tasselled cord or silk band passed through this knob provided the handle necessary to hold the mirror before the face. None of the mirrors, it would seem, goes back further than the Han dynasty, and copies and surmoulages of the Han types are numerous in later periods. The only types which can be dated with confidence on the evidence of style are originals of the T'ang and Sung dynasties (e.g., Nos. M 1 and 3). A fairly good impression of the T'ang style may be gathered by examining the group of small objects in Case M. Nos. 10 to 41. In No. G 9 a delightful little wine-cup in silver of this period is shown, in shape bearing a striking resemblance to the pottery cups of the time, of which an example has been introduced for comparison.

The art of enamelling seems to have been practised by the Chinese as early as the T'ang dynasty. The majority of the Chinese enamels exhibited are in the cloisonné technique, but a few pieces decorated by the champlevé process, are shown, such as Nos. A 23 and 25. The essential difference between the two processes is that in champlevé work the cloisons to hold the enamel are provided by the cutting away of solid metal, while in cloisonné they are produced by the addition of metal strips soldered edgewise to the copper body of the object, which may thus be made of comparatively thin sheet-metal. The operations of filling in and firing the vitreous pastes, polishing the whole enamel surface, and finally gilding the undecorated portions, are practically identical in both processes. The difference between Ming and modern enamels is well illustrated in the pair of snuff-bottles, Nos. K 121 and 122.

The word Jade is derived, through the French, from the Spanish "piedra de hijada," which means "stone of the loins," because by rubbing the loins with this stone a cure was supposed to be effected. Like its Chinese equivalent, "yü," it is a general term employed to denote a variety of beautiful minerals, the chief types being jadeite and nephrite. Early tomb jades have long been sought for and prized by Chinese collectors. In this country there are scarcely any of the earliest types. It is therefore a matter of congratulation that several undoubted examples of very early date have been secured for the Exhibition.

Nos. A 59, 60, L 18, 24, 31, 32. Later tomb jades are also shown, and it is evident, from the type of decoration on some and the fine finish of others, that the custom of burying jade emblems existed in quite late periods. The Chinese possess and fully appreciate the great beauties of other stones besides jade. During the last dynasty were made many ornaments and objects of lapis-lazuli, turquoise, and a wonderful variety of quartz crystals and agates, all of which are hard stones, also of various serpentines, steatite, and amber, which are softer materials. Ch'ien-lung was fond of these stones. He possessed a set of the Eighteen Lo-han, each seated in a rocky cave, and each made of a different mineral. These were scattered, unfortunately, in 1861, but some of them have since been traced. In this exhibition is shown a rocky cave of turquoise, No. C 37, which certainly belongs to that period, and is probably the turquoise specimen of this set.

Chinese sculpture is still but little known. M. E. Chavannes has recorded for us the achievements in this art of the Northern Wei and early T'ang dynasties, from the fifth to the seventh centuries of our era. Most of that still existing is found in the great Cave Temples of Lung-mên in Ho-nan. The depredations of dealers' agents have seriously marred the beauty of these treasure-houses, though it is to such that the Exhibition owes so masterly a work as the head of a Lo-han, No. A 29. This comes probably from the cave Pin Yang, and was carved in the year A.D. 641 under the orders of Tai, King of Wei, a member of the Imperial family of T'ang. Other sculptures in the Exhibition of approximately the same date are the trinity on the Mantelpiece (extreme right), which is dated August 9, A.D. 519, in the Wei dynasty, the Kuan-yin (ibid., extreme left), the attitude of which, together with the heavy earrings and treatment of the hair and drapery, betrays a strong Indian influence, and a beautiful little trinity (ibid., between centre and right), in the best style of this period. The most impressive piece of stone sculpture in the Exhibition is undoubtedly the standing figure of Kuan-yin, of some size (ibid., centre). This is of the Northern Wei or Sui dynasty, and bears a striking resemblance to a famous stele in the Golubew Collection dated A.D. 543, and to another in the Freer Collection which is also dated in the sixth century. In bronze are Nos. A 37, A, B, C, a Reliquary and two Guardian Kings, which, together with D, E, and F, are believed to be part of a famous altar, formerly in the collection of the late Viceroy Tuan Fang, dated in the thirteenth year of the great Sui dynasty, A.D. 593; in any case they are surely of this period. Of the same period is a bas-relief (right of Case A), in hard-baked clay, of a Buddha with four attendants. The Exhibition includes a fragment of the very best T'ang workmanship. No. A 33, which bears all the marks of the highest achievement, and invites comparison with any but possibly the greatest works of Greek sculpture. The marble lion, No. A 31, the bronze lion, No. G 2, and the little bronze of a fighting tiger and bear, No. M 27, bear striking witness to the skill and taste of the T'ang sculptors, to which the spirited treatment of some of the bronze mirrors of this date also bears eloquent testimony. The beautiful silver cup, No. A 55, is, apart from its technical interest and rarity, of peculiar value. The inscriptions on it declare it to have been made in A.D. 1345—that is to say, towards the very end of the brief Yuan dynasty, and in its style it reflects the spirit of Sung with singular radiance. Mr. R. L. Hobson declares that it is probably unique—in Europe, at any

rate. It is, at any rate, one of the most important objects in the Exhibition. Of Ming sculpture there is no lack, in every conceivable material. The most admirable piece is probably a small seated figure of an old priest, No. A 63, of gold-lacquered wood. Equally fine in its severity is a seated emperor in ivory, No. A 5. Of lacquered bronze, Nos. A 43 to 45 are good examples, while the peculiarly Chinese material, bamboo root, is well represented by Li Po in his cups, No. A 11.

The few examples of Chinese painting exhibited merely hint at an immense subject. Painting has always been the supreme type of art in China, and has been practised since the early centuries of our era by countless masters. In this Exhibition (above Case G) a rubbing from an incised stone, a portrait of Confucius, is a record of a picture ascribed sometimes to Ku K'ai-chih, sometimes to Wu Tao-Tzu, who, according to all tradition, was the greatest of all Chinese painters. Wu Tao-tzu belongs to the T'ang dynasty. Of the painting of this period, apart from the Buddhist pictures found by Sir Aurel Stein at Tun-huang, scarcely anything remains, though enough to show what force and grandeur the art of T'ang had reached. No. 7 is a free copy from a T'ang picture, made many centuries later, but preserving the character of T'ang design and spacing. Landscape, developed so early in Chinese art and considered by the Chinese as superior to figure-painting, was fairly matured in the eighth century, but reached its full development in the Sung dynasty. Nos. 3 and 4 are examples of Sung style in a tenderer mood, though it seems likely that they were actually painted at a later period. No. 14 belongs to the end of the Sung period, when traditions were hardening. The succeeding Yuan period may claim No. 13, a fine specimen of the expressive Chinese brushwork and energetic design, animated by humour and character. Two famous masters of this period were Chao Meng-fu and Ch'ien Shun-chü. To the former, who was renowned for his horses, is attributed a roll of hunting scenes, No. N 1; to the latter, the richly coloured pair of paintings of birds and flowers, Nos. 2 and 3.

With the Ming period genre subjects and a more ornate colouring came into increasing vogue. No. 10 may be a fragment of a picture of the school of Lü Ch'i, a famous master of the fifteenth century; but the most popular phase of Ming painting is that represented by Tang Yin and Ch'iu Ying, both famous for their portraits of fair ladies. Nos. 16, 21, and 22 are landscapes by T'ang Ying; they illustrate his gift in a very attractive manner. No. 8 is another good example of Ming genre. No. 6, with its large design, shows that under the Ch'ing dynasty Chinese painters had not lost touch with their great traditions. In revolt from academic formalism, we find individual artists breaking free with a delighted extravagance of assertion. In such work as No. 1 we feel this personal note very strongly. At the same time, pictures inspired by daily life, and especially the occupations and amusements of women and children (Nos. 7 and 20), were in great vogue, and are often of seductive charm; and in the painting of flowers, passionately loved from time immemorial, the Chinese have never ceased to show their reverential feeling for beauty, their sensitive skill, their genius for colour, their finely-spaced design.

The fabrics in the exhibition give a comprehensive idea of the range of the textile of China in its later developments. The larger part of the stuffs in the exhibition are of the eighteenth century. Perhaps

the most remarkable are those woven by a tapestry process (known as "K'o'ssu") similar to that employed in tapestry-making in the West, but on a far more minute scale. The beautiful "inlaid" effect of these panels, and the fine contrast of the coloured silks with the gold thread often lavishly used, will be appreciated in many examples shown. The rugs and mats are hand-knitted in wool or silk, and in one instance (centre of mantelpiece in gallery) gold thread is introduced with the silk. "Pillar-carpets," of which two are shown in the hall, are peculiar to China, and the parts of Central Asia under Chinese influence. They were made for use in temples, and many have been brought in recent years from Tibet. Inscriptions in Chinese, Manchurian, or Tibetan characters sometimes occur on them, and figures of Tibetan priests are found. The imagery and symbolism of Chinese Art are amply indulged in by the weaver, and are exemplified on the robes and other woven and embroidered fabrics in the exhibition, which is in all respects a most interesting one, and can, as usual, be enjoyed at leisure amid the delightful quietness, and facilitated by the careful arrangement characteristic of those responsible for the unique opportunities of study the Burlington Fine Arts Club from time to time affords.

"BUILDING NEWS" DESIGNING CLUB.

A SMALL SOCIAL CLUB FOR AIRMEN.

The chief purposes of Competition Conditions are to inform competitors as to what the promoters consider they require, and rules help to keep the contest within certain defined lines. Differences of interpretation are bound to assert themselves, and no casuistry can get over that. The upshot of it all amounts to this—viz., that a plan may provide in the aggregate what is asked for, grasping also in a distinctive way the purposes of the intended work without being actually free from technical shortcomings. Such a design is not likely to be disqualified by trifles of a secondary order.

"Thistle" exhibits discrepancies of this sort, but for all that we reckon him to be decidedly first; "September Morn" comes second, and "Tomeliter" scores as third, while "Villain" stands fourth. All of these schemes differ essentially and architecturally; they are unequal, and perhaps one or two are indifferent. All display a varied idea of planning. The novelty of the subject appears to have discouraged members from trying their hand in this contest; consequently few have responded, which is a pity, for such a job as this might quite likely be wanted, while actually there is nothing very special about the requirements, such as needed personal knowledge about flying-machines. Airmen, no doubt, differ from club habitués as regards their avocation; but otherwise their own club requirements are very much the same as those of other people moving in fairly affluent society.

"Thistle's" design in some degree is rather ponderous in appearance; indeed, there is nothing exactly airy about it. In a sense, it looks overweighted by the very tall roof. Nevertheless, it is the best scheme before us, insuring as it does a sufficiently palatial character by making the premises worthy of a club to be used by well-to-do members who value unpretentiousness more than fussy fancy in their buildings, which ought not to resemble boat houses or look like cricket pavilions. The lay-out of "Thistle's" plan accords with its purpose, and the symmetry of its outline is of prime consequence considering the eminence of the situation on the top of an elevated site. Keeping this fact in mind, the author did well not to skimp the measure of his hipped roofing. Mostly seen from below, the effect of its contour necessarily would be foreshortened and a less bold

roof might appear insufficient and mean. The French châteaux on high ground generally were distinguished by their architects with tall roofs, and Old-English domestic work also depended on its roofing lines for charm of effect. Castles had ramparts and flat roofs, where they served as strongholds against onslaughts on rock-cut sites or precipitate positions fit for defence. This digression is only made because otherwise some might fancy, by approving of "Thistle's" roof, we had overlooked the old preference in architecture for towers on hills, and spires in the lowlands. This little club is of an entirely different type, and is incomparable with either of the types of buildings mentioned. Churches and castles belong to another order, and so do country mansions and such like. The designs before us are to be judged on their own individual merits, and in doing that the proportions incidental to the situation intended have to be taken into account. This unimportant club on its downlike prominence ought to look new, and even novel, by being up to date and modern. Being seen on all sides and viewed from lower levels, its designer to be successful had to realise its relation to the locality, and, judging from his design, "Thistle" deserves much credit accordingly. The breadth of his frontispiece on both the main elevations is justified by the same reason. Less ordinary than the usual sort of dormers, it looks novel, and the contrivance gives more cubic space to the first-floor apartments inside. These otherwise would have been reduced to the value of cock-lofts. On the other hand, this central treatment is architecturally distinctive by being akin to the attic of a façade without emulating such a feature in its Classical sense. The result consequently is somewhat out of the ordinary, for there are suggestions of brains being at the back of this notion. Critics of the regulation school might disparage the combination as being what they call "queer"; but with that opinion we are out of accord. Little difficulty need occur because of the internal guttering, as shown on the section between the main roof and these auxiliary ones. All that the plumber need do is to give a good fall and make the flashings high enough for snow and storm water, and, above all, to provide that the gutters are left unobstructed at either end, keeping the outgo wide and free. The dimensions on one or two of the rooms are less than we specified, and "Thistle" has left out the lockers in the dressing-room and the wall-benches in the billiard-room. In this apartment the passageway through from the corridor to the external French casement opening on to the terrace cuts the apartment up rather too much. This criticism is emphasised by the different treatment suggested for the ceiling of the room immediately over this part. In reality the "passageway" would not be so evident, and might not be often used in that way. The increase of sizes to some of the rooms to make them comply literally with the schedule would not actually change the character of this plan. The corridor between the front rooms and the rear premises seems as if it might not be sufficiently lit. The sanitary provisions given are well isolated, and the setting out of the club is unassumingly appropriate, as well as architecturally fit. By various expedients others have endeavoured to get windows on three sides of the chief apartments, in order to insure a more ample oversight of flying craft. "Thistle" has attempted little that way, and by keeping the heads of his windows so low down he curtails their capacity, which he deemed sufficient. We have not, therefore, been given as much as we might have expected from so emancipated a styleman, whose shortcomings in this particular score are faults to be regretted. The omission of rain-water pipes may be a common oversight, and in this case their absence is not so momentous as might be the case; but, for all that, downpipes have to be used, and should be shown, particularly when internal gutters occur like those next the main slopes to the tall roofing of this clubhouse. The eaves are curiously depicted, and at the same time the verge of the tiling comes flush

with the parapet, below the top of which there appears to be a projecting trough-gutter; consequently we presume "Thistle" intends to bring the lead as an apron from under the tiles down the wall and round this guttering. The water would overflow above the position of the French casement-doors in the front elevation, seeing that the outgo is cluttered up with the blocking feature rising above the cornice at these points just where ample allowance for the water to get away is most necessary. The hip tiles tilt out according to the side elevation, but in the principal façades are drawn differently. "Thistle" would do well another time if he noted what the rules say about the size of paper sheets to be used; also he will see that a washed tint is contrary to the regulations. He did not use a brush, it is true, but got the effect of a wash by rubbing lead pencil over these drawings.

"September Morn," the second competitor, gives us a more ordinary sort of building, providing much too spacious a first-floor. The lay-out of the ground-plan is less satisfactory than the first scheme. The central hall relies on a restricted area for light, this little open space being depended on to light the lavatory block, which is close up to the hall window. We are aware that the height of its wall is moderated in its obstruction. The plan seems cramped and too casual. The entry to the ladies'-room is darker than desirable. The luncheon-room is minus a lift, and the scullery has no external door on to a flat as given by the premier scheme. There is no coalspace. The exterior treatment favours a cricket-pavilion, and perhaps this effect is due to the verandah, which would, however, facilitate rushing out to see a passing aircraft. The lavatory tacked on to the ladies'-room precludes a window to the west. The dressing-room has the advantage that way, but the wide eaves curtail the outlook. The roofing is cut up needlessly, and the chimneys do not balance. Two bedrooms lack fireplaces, and the grate in the steward's parlour is poked up awkwardly in the corner. It might have been set on the splay.

"Tonnellier" sacrifices the economical contrivance of plan by adopting four angle set-wings extending on the diagonal. To accomplish this extravagance two wasteful ante-rooms are introduced, giving a sort of "den" to the billiard-room, and a very awkward approach to the ladies'-room. The luncheon-room is made an oddly-shaped place, dodged about like a riverside second-rate restaurant catering for trippers. It is scarcely a model arrangement to make the ladies pass the windows of the steward's office every time they go to their lavatory, running the gauntlet also by side of the waiters' rendezvous for working the servery, and the ladies' going and coming is also in full view of the approach to the men's private quarters. The first-floor in this scheme is overdone with spaciousness, the bathroom provided for the steward being large enough for a prince. The elevations are well managed and quiet, depending upon their grouping and avoiding specious ornament, which is praiseworthy. Somehow or other, the premises look as if their author had been commissioned to design a cottage hospital with small wards extended diagonally to insure sunshine and the circulation of air. We are not clear how the flues from the card-room and ladies'-room reach their whereabouts, as shown in the roof, though we acknowledge a measure of faith in so careful a man as "Tonnellier," whose elevations are precise to a fault and his draughtsmanship looks reliable. The plan, however, is not a good one, because to reach the smaller rooms members must go through the chief apartments. The ladies, for instance, must wind their way from their department through the luncheon-room every time they want to go out or come in, and must pass close by the front door before turning round about to proceed to their retiring-room. There is too much circumlocation by far. The perspective view is too diminutive to be effective.

"Villain" adopts an irregular elongated

shape for his building, and where the frontage starts off at a tangent a circular hall is introduced to mask this divergence. The luncheon-room and billiard-room run up into the roof. The former apartment has a hooded fireplace, as in old Gothic halls, while here and there in the open timbered roof dormers diversify the framings. A flat ceiling occurs with exposed beams carried across level with the second tie-timber of the truss. The club kitchen is tucked up in the roof between this assembly-hall and the billiard-room; but the service place is below on the ground-floor, far removed from the steward's quarters, which come over the card-room, ladies'-room, and lavatories for both sexes set out in a wing jutting out northwards, where there is a house-yard. The building assumes the form of a long, rambling sort of bungalow, with a terrace parallel to the main frontage and returned at both ends. The effect is rather high-shouldered besides somewhat ingenious and unconventional or odd. Every part, however, is well lighted, but we confess a doubt as to anyone easily recognising the purpose of the building judging from its exterior appearance. To justify claim to success every building should naturally bespeak its purpose, even though at times this may require a niceness of judgement, seeing that the precise difference between one institution and another may resolve itself into a question of detail. We do not, of course, insist upon any such straining principle; but the point is sufficiently illustrated by the three published designs for this club. There is a niceness of discrimination about "Thistle's" scheme which expresses its *raison d'être* in a way scarcely approached by the others, and they are the best of the remainder. It is hoped that this additional remark about "Thistle's" work may put him on his mettle another time.

"Sea Wolf" is unequal. A palatial entrance surmounted by a segmental pediment, which, if interesting in itself, overweights his design, moreover that has little in common with such central feature. It belongs to another category, and the chord struck is out of harmony with such a setting. The chimneys fail to give support to this dominating portal, because they do not balance as they might have done, and the uniformity of the remainder of the premises merely suggest an incongruity of thought. The windows and flanking pavilions correspond, but being handled in a style foreign to the *bon mot* so ponderously expressed are disappointing, and the plan has a casual air about it. The landing on the first-floor is wasteful and the corridor leading to the chief apartments below is dismal. "Sea Wolf" has taken pains and shirked nothing. We recognise fully his endeavour and hope he will try again with better results, meanwhile taking our remarks in good part.

"Haughton Lea" schemes a plan with distinct architectural merit, which we are glad to note, but darkness is dominant where light ought to be abundant in the midst of a club busy with the congregation of members on special occasions. The passage above the main corridor has to rely on roof skylights. The entrance-hall, with the opulence of columns to give it distinction, would be very dark. The service-lobby is a benighted place, and through this busy quarter the club users must pass to and from their dressing-rooms, while the waiters will have no place to set down their dishes, glass, or roasted meats. This lack of reasonable provision would prove fatal to the working of institutional administration. Outside the design exhibits a restless building very over-furnished with too many vertical lines. Sobriety and homeliness instead should distinguish it and suggest a feeding of domesticity, and beyond that also a recognition of the social aims expected in such a club.

"North Point" sends no view, but we realise the topheavy look of his main gables, Dutch-like in character. To the front of his building he puts conveniences and house-yard, with a big circular hatchway to the coal place. To the south-east, which

includes the chief rooms of the club, there are two minor porches, the "dining-room," projecting its whole length beyond the cross-corridor connecting the billiard-room and drawing-room in the low wings of the building. There are too many projections about the lay-out and the lounge entrance vestibule is a dismal and uncomfortable shut-off sort of place, neither a hall nor a parlour, with the telephone-boxes poked up in one corner.

"Tom Tit" overweights his scheme with glazed roofs to the rear premises utilised by billiard-room, dressing-room, and baths. The remainder of the building might be an ordinary house of a commonplace type. The plan is not adapted to club purposes, the middle hall being quite dark, and the club kitchen right away from the location of the luncheon-room and steward's hall. The service-door is in a narrow passage leading to the billiard-room, dressing-room, and baths.

The following is a copy of the instructions issued for the members to follow:—A small social club for airmen and their friends. The premises are intended to be erected by the members on a plot of private land adjacent to aviation trial-grounds situate within a few miles of a big town. No garage will be needed in connection with this club, because the Aviadrome Company has amply provided for the housing of motors close at hand. The club will occupy an elevated level site amply sufficient for the purposes of the building and its double forecourt terraces, whence aircraft displays can be viewed from a point of much advantage above the level of all buildings and tops of trees round about. The aspect for the main front is S.E.; but the lay-out of the apartments is intended to insure as good a prospect as possible from the chief rooms, and especially from the general assembly or luncheon-room, 40ft. by 25ft., and from the ladies' drawing-room, 25ft. by 18ft., or of that area. There must be a good entrance-hall, about 18ft. by 12ft., and a lobby to the front entrance, with small card-room and pair of telephone private call places, with glazed fronts, near the entrance door. A billiard-room (for one full-sized table), having raised single row of wall seats on three sides. Provide a set of four bath-rooms, and a general dressing-room, about 25ft. by 12ft., or of that area, with lockers at each end or on one side, three w.c.'s, and a men's lavatory en suite. Ladies to have one bathroom, good lavatory or retiring-room, and w.c. adjacent, well isolated by ventilated lobby. Upstairs a club kitchen and offices, steward's living-room, and three double bed bedrooms, the accommodation being for a married couple with child or two, and two servants. The service entrance door on small house-yard to be on the north side of building. Staircase will be private; but ladies' retiring department may be on an upper level if thought desirable. The upper terrace to be 6in. lower than club-floor level, and second terrace 4ft. lower than upper on both terraces, 20ft. wide, will extend round three sides of the club, with steps conveniently placed for access in three places. No verandah round club desirable. A block plan to small scale will suffice to show the terraces. General drawings, drawn to scale of 8ft. to the inch, to be confined to the club building, which will be built of brick, with wood window-frames and metal casement glazed with plate-glass. Roofs covered with tiles, and not treated as a flat for belvedere. A picturesque design on simple lines suitable for a club will gain preference. No tower wanted. Show at least three elevations, on section to eighth of an inch scale, and to plans to scale 16ft. to inch. A view from S.E. is required. Drawings (with complete attached on back) due at BUILDING NEWS office not later than Wednesday in Easter week, April 7, 1915.

Mr Alfred Champney Bothams has been appointed architect and surveyor to the Salisbury and District Joint Isolation Hospital Committee.

Mr. Arthur Taylor has been appointed by the Irish Local Government Board arbitrator to deal with the claims made in connection with Dublin Corporation Springfield housing scheme.

THE REGENT PALACE HOTEL.

The Regent Palace Hotel, which opened to the public on Wednesday, is a triumph alike for architect, builder, and decorator. But for the building strike of last year, this magnificent structure would have been ready for occupation last November. All difficulties having at length been overcome, the work went on apace, with the result that the Regent Palace Hotel is one of the

Messrs. J. Jeffreys and Co., and the lift engineers were Messrs. Waygood-Otis, Ltd. The five passenger lifts are fitted with signals which enable passengers on any floor to call a lift by pushing a button. The first of the lifts which reaches the floor stops for the passenger. The hotel has in all 32 lifts. The whole of the asphalt, from that used in connection with the air-ducts and damp-courses to the temporary and permanent roofs, has been supplied by the Seyssel and

appointed county architect at an inclusive salary of £600, he bearing all clerical, office, and travelling expenses necessary to enable him to carry out his duties. These duties were that he was to act as architect and perform all the work of architect in connection with the county bridges and all county buildings, except the county lunatic asylums and the council's schools and other educational buildings. The salary was to be in lieu of all commission, and was to cover the preparation of plans and estimates for new buildings, and for the improvement, extension, alteration and repair of existing buildings, and the supervision of the execution of all work. The appointment was not a whole-time one, Mr. Ruck being in terms permitted to take any other work, whether of a public or private character, which would not interfere with the discharge of his duties as county architect. In August, 1907, the work of erecting new county bridges was transferred from the county architect's department to that of the county surveyor. This change was made without altering the salaries of either the county architect or the county surveyor. The committee were of opinion that so far as the county bridges were concerned the present arrangement was inconvenient, and the committee recommended that Mr. Ruck be relieved of this part of his duties, and that all work in connection with the repair of county bridges be assigned to the county surveyor.

The committee were also of opinion that the council should order that Mr. Ruck be repaid actual travelling expenses, the scale of such expenses to be prescribed by the committees under which Mr. Ruck served, and recommended that Mr. Ruck be paid as from October 1 next an inclusive salary of £400 per annum. A memorandum prepared by the county architect, which was appended to the report of the committee, gave particulars of the county buildings and bridges under Mr. Ruck's supervision, and showed the cost of the works carried out in each year since 1904, the total being £62,849 17s. 3d. Mr. Ruck added that his net official income had not exceeded £450 per annum, and his yearly income from private works had not averaged more than £65.

Alderman Marsham, in proposing the adoption of the report, said he had come to the conclusion that the committee's recommendation might be just, but it was decidedly not a liberal one. Mr. McAlpine, in seconding, said he, too, thought they were not treating Mr. Ruck quite fairly. An amendment moved by Mr. Shea, that Mr. Ruck be paid a salary of £500 a year, plus travelling expenses, was rejected, as were other amendments, and the committee's report was eventually adopted.



THE REGENT PALACE HOTEL, PICCADILLY CIRCUS.

most luxurious and comfortable establishments to be found. The magnificence of the reception-hall, the rotunda court, the winter garden and palm courts, and the Louis Seize-room must be seen to be believed. The hotel is designed to accommodate 1,500 guests, and there are 1,028 bedrooms, in every one of which there is an independent supply of hot and cold water and an electric heater for use when required; the staff numbers over 100. And all this luxury and comfort are obtainable at fixed charges, and "No Tips" is the inflexible rule throughout the hotel. So the guest knows exactly the extent of his liabilities.

The hotel was illustrated in our issue of October 2, 1914. The architects are Mr. Henry Tanner and Mr. F. J. Wills, and the late Mr. W. J. Ansell. The contractors were Messrs. J. Mowlem and Co., Ltd., of Grosvenor Wharf, Westminster, and Mr. Searchfield was the clerk of works. The surmounting Marmo facing materials were supplied by the Leeds Fireclay Co., Ltd. Messrs. George Jackson and Sons, Ltd., were responsible for the decorations. Mr. Arthur H. Barker, of 40, Queen Anne's Gate, had charge of the system of central ventilation and electrical warming installed by

Metallic Lava Asphalte Co., in all about 16,000 yards. Messrs. Strode and Co. carried out the wrought-iron balconies, balcony railing, area railing with special emergency gates. They also supplied the special crystal fittings for the dining-room. The total length of railing is 500 yards. The whole of the locking arrangements have been supplied by Messrs. Hobbs, Hart, and Co., Ltd., and include the most up-to-date system of master keys and sub-masters for each floor and corridor. The paint and varnish throughout the building are the celebrated "Britannia" materials manufactured and supplied by Messrs. Robt. Ingham Clark and Co., Ltd.

THE KENT COUNTY COUNCIL AND THEIR ARCHITECT.

At the quarterly meeting of the Kent County Council held at Maidstone on Wednesday in last week the report of the special committee appointed to consider the terms of the County Architect's appointment and the duties assigned to him was submitted. It stated that the appointment was made in April, 1904, when Mr. Ruck (who was then vacating the office of county surveyor, which he had held since the year 1880) was

THE VALUE OF THE HIGH-PRESSURE STEAM TEST OF PORTLAND CEMENT.*

By R. J. WIG and H. A. DAVIS.

The use of high-pressure steam as a means of determining the soundness and cementing quality of Portland cement was advocated as early as 1880 by both Michaelis and Erdmenger. It has been recommended and used by others from time to time until recently, when a form of this test was advocated and introduced into specifications for the purchase of Portland cement as the Force autoclave test. Many brands of American cement would not regularly meet the requirements of this test, and its recent introduction led to a controversy between cement manufacturers and consumers. The manufacturers of Portland cement contended that this test was an abnormal one, and the behaviour of a cement when so exposed was no criterion of its ultimate behaviour as normally used in concrete. Furthermore, it was suggested that this test be introduced into the United States Government specification for Portland cement, and it was for these reasons that an investigation of the value of the high-pressure steam test was taken. This investigation included a study of the physical

* Abstract of Technologic Paper No. 17. Communicated by the U. S. Bureau of Standards.

properties of cements that were sound after exposure in high-pressure steam and cements that failed to meet the requirements of this test. Tests were made of the tensile and compressive strength in mortars, compressive strength in concretes, and the linear change of neat cement prisms stored in air, in water, and treated in high-pressure steam. The qualitative high-pressure steam test consisted of subjecting a pat of neat cement, after storing for the first twenty-four hours in a damp closet, to steam at a pressure of 300 pound per square inch for one hour, in a steam-tight boiler, the total time in the boiler being three hours. A cement was said to have passed this test if the pat was hard and sound when examined after this treatment. The quantitative high-pressure steam test consisted of moulding six neat cement briquettes, storing them twenty-four hours in a damp closet, then treating three of them in steam at 300 pounds pressure for one hour in a steam-tight boiler, the total time in the boiler being three hours. The six briquettes were then broken in a cement-testing machine, and a cement was said to pass the high-pressure steam test if the treated briquettes showed higher tensile strength than the untreated. Eighteen two-barrel samples of cement, composed of seven different brands, were obtained for testing in concrete. The cement of some of these samples passed the high-pressure steam test, and the cement of other samples did not. The concretes prepared from these cements have been normally exposed to the atmosphere for two years or more and tested for compressive strength from time to time. Sufficient specimens were prepared to continue the tests for ten years.

The following is a brief summary of the results of this investigation:—The general soundness tests show that some cements mixed neat which are sound according to the standard atmospheric steam test, but unsound in high-pressure steam, exhibit signs of unsoundness when stored under normal conditions in dry air. This unsoundness may require nine months or more to develop in neat cement specimens. The strength tests of mortars and concretes fail to show any difference in the cementing quality of cements that pass the high-pressure steam test and those that fail to meet the requirements of this test. There is but small difference, if any, in the linear change of prisms made of cement that passes the high-pressure steam test and prisms made of cement that fails to meet the requirements of this test, whether stored in air or water. Seventy per cent. of a total number of fifty one brands of Portland cement tested passed the high-pressure steam test. Cements normally unsound in the atmospheric or high-pressure steam tests will generally be found to be more sound than the original cement if the coarser particles are removed. While fineness is not essential to soundness, it appears usually to be the coarse particles of a normally unsound cement that cause the expansive action resulting in cracking and disintegration of the hardened cement in the accelerated tests of soundness. A cement originally unsound in the high-pressure steam test will usually be found sound if exposed to this test after ageing from two to six months.

The following conclusions are drawn from the results obtained:—

1. The high-pressure steam test should be made on all cements that are to be incorporated in cement mortar or concrete products that are to be cured in steam at pressures above atmospheric.
2. The high-pressure steam test may be of value as forecasting the behaviour of neat cement or a very rich mortar when exposed under normal conditions in dry air; but it does not forecast the behaviour of cements in concrete as normally exposed.
3. Cement passing the high-pressure steam test is not superior in cementing quality, as determined from the compressive strength of concretes, to cement that fails in this test.
4. Cement passing the high-pressure steam test does not make more permanent or durable concrete than cement which meets

the requirements of the standard specifications but fails in this test.

5. Cement failing to pass the standard atmospheric steam test, but meeting the other requirements of the standard specifications, shows in some instances a normal strength in concrete.

6. For practical work under normal conditions of construction, the results of this investigation fail to show that the high-pressure steam test is of value as a means of determining the ultimate soundness of concrete.

PREVENTION OF DRY-ROT IN MILL BUILDINGS.

Preventive measures recommended in the case of dry-rot in mill buildings are discussed by Mr. F. J. Hoxie, engineer and special inspector for the American Associated Factory Mutual Fire Insurance Companies, in an informative booklet entitled "Dry-rot in Timber," from which the following extract is taken:—

VENTILATION AND PAINTING.

Ventilation is generally the first preventive measure suggested. Dry wood which is placed in an atmosphere well below the moisture requirements of a given fungus is undoubtedly incapable of infection with that fungus; but ventilation does not necessarily cause drying, as the wood will come into equilibrium with the moisture in the air and will become drier or wetter in proportion to the relative humidity of the air with which it is ventilated. Therefore, timber ventilated with moist air may have its rate of rotting accelerated rather than retarded. As an example, a thoroughly waterproof covering for a column which had been completely dried would be more useful than a hole through the centre for ventilation if this column were used in a moist paper-mill. A heavy coat of paint may accelerate or retard the rate of rotting, depending upon whether it prevents the wood from absorbing or giving up moisture. The condition most commonly met in which paint causes rotting is when it is applied to green timber saturated with water. With sound timbers which are to be placed in a moist atmosphere, a paint will doubtless prove beneficial in proportion to its waterproofing power. "Cold-water paint," or "fireproofing" paint, containing hygroscopic materials, would be expected to accelerate the process of dry-rot, because it attracts moisture from the air and increases the moisture in the wood.

LIFE OF FUNGI.

Dry-rot fungi grow by two methods of reproduction. The common reproductive spore grows over the surface of the plant, but under unfavourable conditions, such as insufficient moisture, the plant separates into small sections, which can sprout and grow again when conditions are favourable, and can remain from two to four years in the resting state. Dry-rot is chiefly spread by direct contact; but possibly living spores carried in the air can take root when they find a favourable resting-place. Fungi are frequently carried in lumber and spread to other susceptible material by placing it in large piles with scant ventilation. As a result of this, beams are often found more deeply infected in the middle than at the ends.

PREVENTION BY HEATING AND DRYING.

Often an infected building can be sterilised by skilful use of its own heating system. Dry-rot fungus is particularly sensitive to heat, a temperature of 108deg. Fahr. for three hours or 115deg. Fahr. for one hour being sufficient to kill it. It is also killed by complete dryness, but ordinary air-drying does not destroy it. A badly infected mill was treated four times over the week-end by using its own steam-heating plant and raising the temperature to 115deg. Fahr.; but later it was found that the disease had already progressed so far that the beams had to be replaced. To test the effectiveness of the treatment, specimens were taken from forty badly-rotted beams, and only four showed living fungi; while, on the other hand, beams removed from the mill before it was heat-

treated showed a vigorous growth of fungus on cultivation, and also the formation of normal fruiting plants when left lying in the yard. While these experiments are not absolutely conclusive, they are very encouraging, and indicate that the small cost of putting steam on the heat-coils is well worth trying, if there be any suspicion of dry-rot in a new building. Heating will probably prove more efficient in the few scattered superficial inspections of a mill just completed than it did in this mill, where the growth had been in active progress for two years or more and had deeply penetrated the susceptible material.

HOLES IN COLUMNS AND DOUBLE BEAMS.

Sometimes holes are bored in columns and beams for the object of preventing dry-rot; but the common custom of boring green or wet columns just before they are put in place in a building and using moist lumber for double beams leaves ideal places for the growth of fungus, as the air in the openings may be nearly saturated with moisture. The holes in the columns have the additional objection of forming a convenient passage-way for the fungus to pass rapidly from floor to floor before the building has dried out. In slow-burning timber construction it has been customary in many cases where an unusually stiff floor is required to use 2in. by 4in. or 3in. by 6in. planks spiked together on edge for forming the floor. This so-called laminated construction is very treacherous so far as rotting is concerned, particularly if the planks of the lower floors before the walls of the upper stories are complete, thus leaving them exposed to the weather until the roof is put on. Sometimes the floors become thoroughly water-soaked by means of the numerous cracks between the planks on edge, and by the top flooring. This moisture encourages rot. In storehouses for which this form of floor is frequently used, the conditions are worse than in the manufacturing rooms, because the storehouses are seldom artificially warmed in winter, thereby giving less opportunity for drying. Several such cases have been reported within a few months.

At Chapel-en-le-Frith last week, Mr. W. O. E. Meade-King, an inspector under the Local Government Board, held an inquiry as to an application from the rural district council for sanction to borrow £3,950 for purposes of water supply.

Lichfield City Council have decided to defer for the present the scheme for the erection of 20 houses, though a resolution was passed authorising an application to the Local Government Board for consent to the appropriation of land to be used as a site for the houses in Greenups-row.

The Moss Hagg Wood estate, near Selby belonging to the West Riding County Council, is to be the subject of an interesting experiment in afforestation. Some 22 acres of it have been replanted with great success, and the county council at its meeting held at Wakefield decided to replant a further area of 44 acres.

Mr. James Chuter, of Bush Lodge, Epsom, retired surveyor, known as "The Father of Epsom," who had served for 40 years on the Epsom Board of Guardians, and had seen the Derby run 70 times, died on March 3 last, aged 92 years, leaving property of the value £11,024 18s. 9d. gross.

The corporation of Great Plymouth have approved the following amounts of compensation to borough surveyors for loss incurred by the abolition of offices. Mr. J. Paton, Plymouth £310 per annum, Mr. J. F. Burns, Plymouth £310 1s. 5d., and Mr. C. H. Trounce, Ea Stonehouse, £34 16s. 8d. The payments to Mr. Paton, who has accepted office under the enlarged corporation, will not begin till he vacates office.

The Metropolitan Water Board in December last agreed to an estimated expenditure of £16,500 in the execution of works for the better circulation of water in the Staines reservoir. Tenders have recently been invited for the construction of siphon-chambers, conduits, a contingent works forming part of the scheme but only three tenders were received, and the lowest considerably exceeds the expenditure authorised in respect of the whole of the work. Under the circumstances it has been decided to accept a tender until prices become more normal.

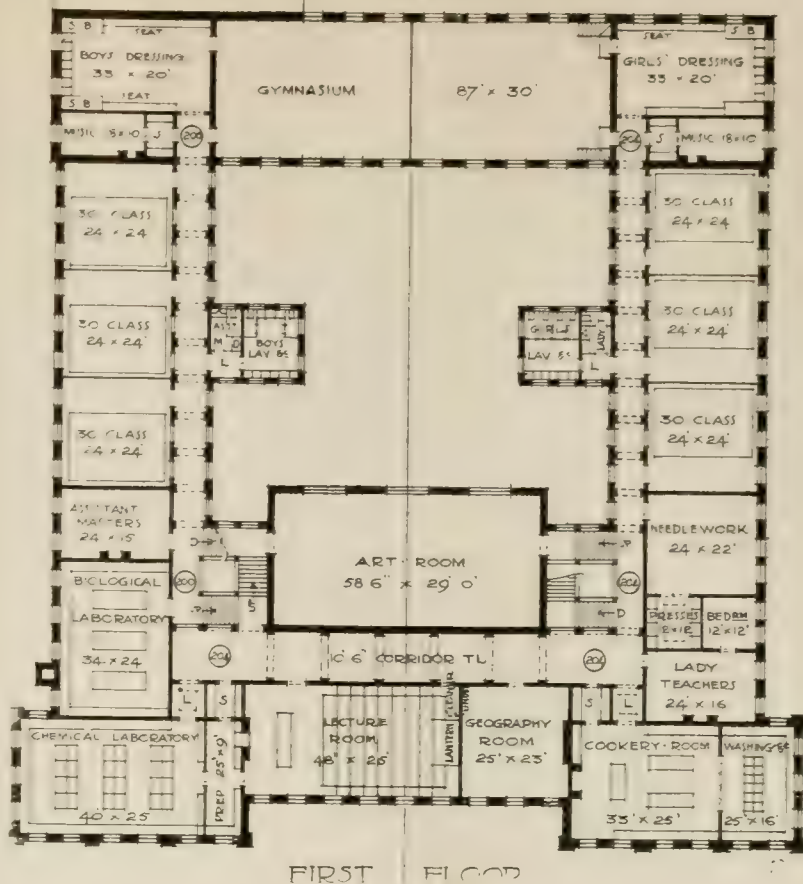
Our Illustrations.

COUNTRY HOUSE FOR U.S.A.

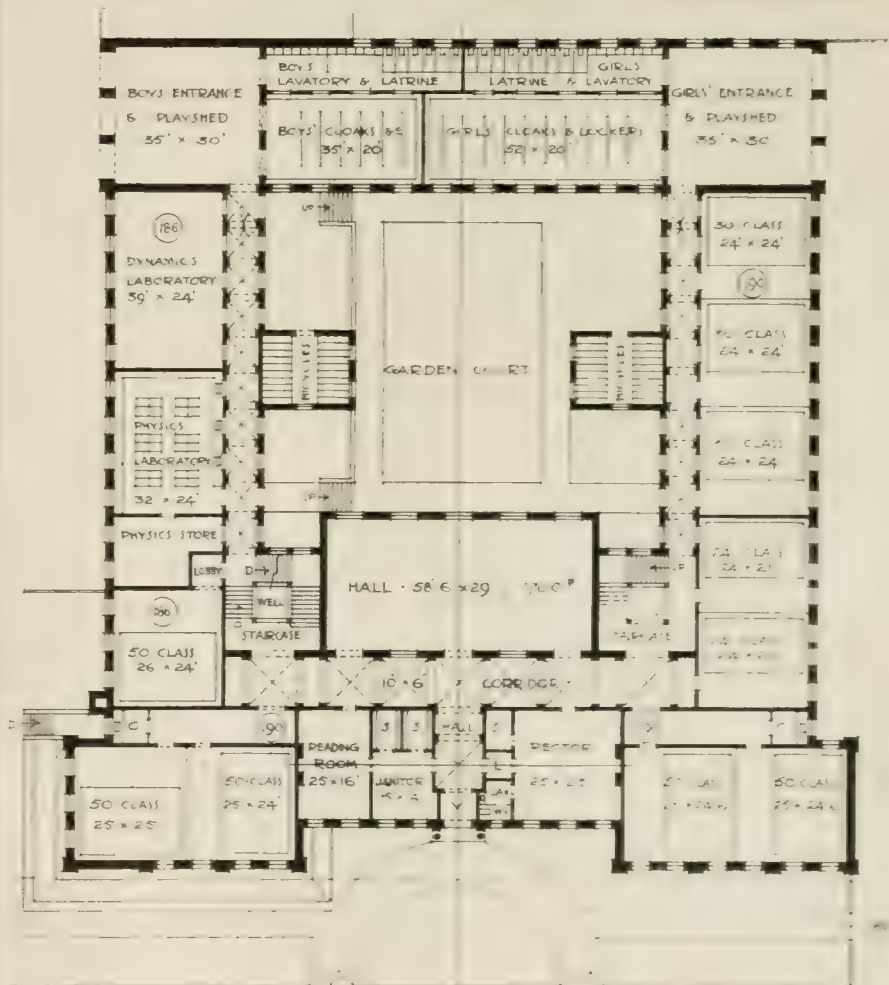
This house is designed in accordance with the requirements of a North American client, and is destined for a site on a hillside sloping to S. and W., and having a fine outlook, in one of the New England States. The arrangement of the principal floor—of which an outline plan is given in the corner of the perspective view reproduced herewith—is the outcome of the embodiment of these ideas. This floor comprises an ample staircase-hall directly within the front door, which faces N., and is sheltered by a pedimented portico, two stories high. The way through is directly under the stairs, beyond which is a wide corridor in the middle of the house, of the same length as the great hall, which is nearly 80ft. from end to end, and is two stories in height. This hall opens on to a wide portico reaching as high as the hall, and shading it from the southern sun; while it also shades an ample terrace, in the centre of which a fountain is placed on the central N. to S. axial line of the house. This is the portico shown in the perspective view. At one end of the hall is the dining-room, balanced by the drawing-room at the opposite end; these rooms have wide sliding-doors, which come in the middle of the ends of the hall, and give another axial view E. to W. right through the house, and continued to the W. by a terraced path. The drawing-room forms part of a group on the E. side of the house, comprising besides the drawing-room itself, the library, 56ft. long, and a square salon, connecting them. On both E. and W. sides of the house are placed, centrally, pedimented porticoes, matching that on the N., and flanked by secondary porticoes rising only to the level of the principal bedroom floor. On the W. side this portico protects the dining-room from the afternoon sun, in summer, and in winter would be enclosed by glass. On the same side as the dining-room are the serving-room and pantry, as well as the study of the master of the house, which has a separate outside approach from the kitchen-yard, occurring at a lower level. The basement, which, owing to the lie of the land, is really above ground on the S. and W. sides, comprises, besides the usual offices, a billiard room, a gymnasium, and a swimming-bath. There is also an attic-floor. The house is to be of red brick—of course, of the current American dimensions, 8in. by 4in. by 2in., which is the same as the old English bricks—with stone dressings, on a steel frame, with fire-resisting floors; the roof will probably be of hand-laid fine shingles laid over concrete slabs. The fittings of the house will combine whatever is best in American and English ideas of convenience and comfort. The style is based on American-Colonial, modified by the English Classic, on which the former was founded. The drawing reproduced is at present in the Royal Academy Exhibition. Messrs. Poynter and Wenyon, of 9, South Molton-street, W., are the architects.

DALZIEL HIGH SCHOOL. MOTHERWELL.

This building, now in course of erection, is a mixed school to accommodate about 600 boys and girls. The walls are faced with grey Auchenheath stone, and the roofs covered with small grey slates. The windows are fitted with steel casements, all parts of which are made to open. The classrooms are finished with tile dadoes and cement walls and wood-block floors. The entrance-hall has a marble floor, and the remaining corridors, staircases, etc., are in granolithic. The only pinery in the school will be the doors, labelling to assembly-hall, and fittings. The culpture panel, 9ft. by 6ft., over the principal entrance is being carved from a model prepared by Mr. A. H. Hodge, now on exhibition at the Royal Academy, like the drawing here given. The erection of the work is being supervised by Mr. J. Dempster, the board's permanent master of works. The architect is Mr. S. B. Russell, F.R.I.B.A., Gray's Inn-square, London, W.C.

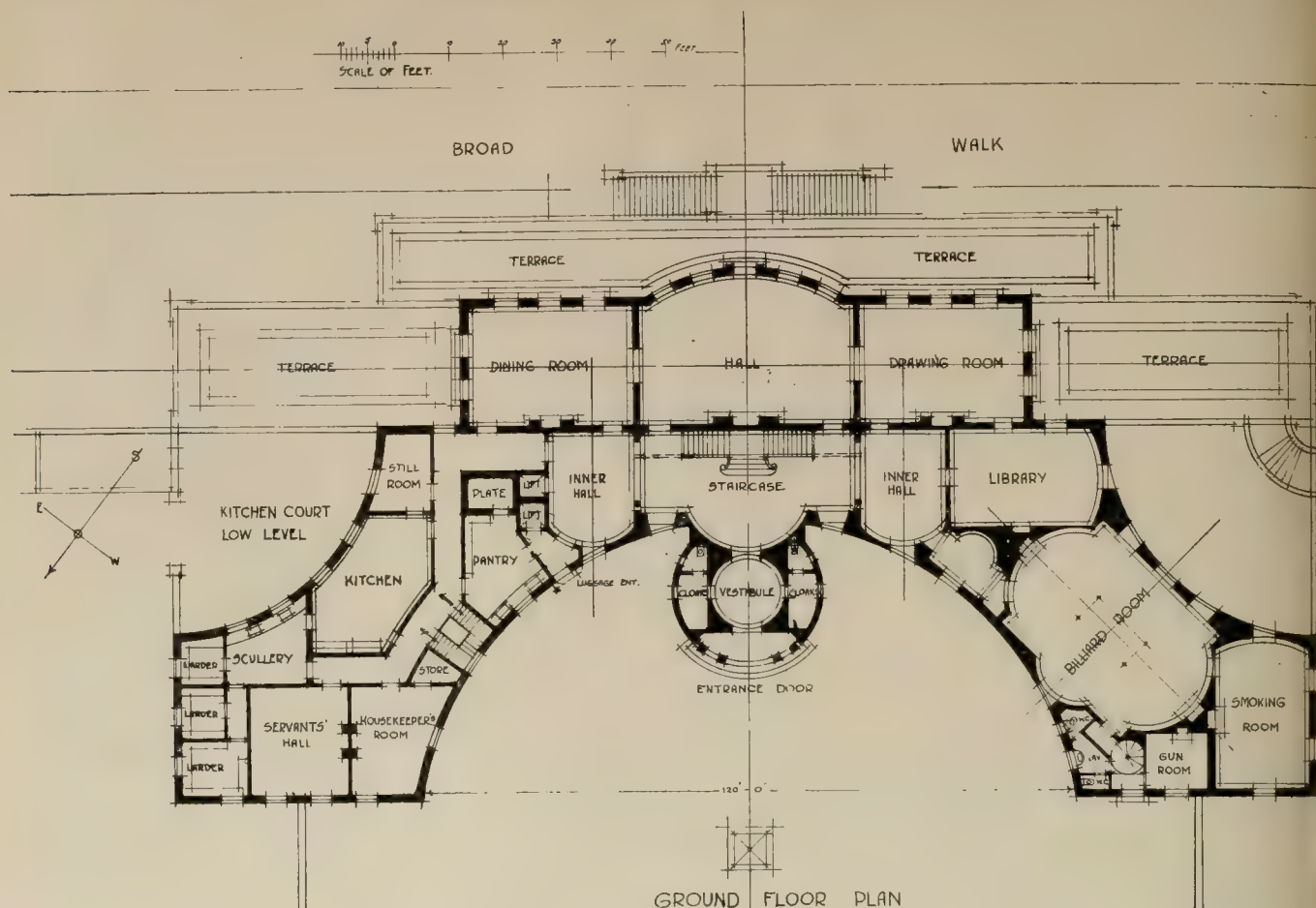


FIRST FLOOR



GROUND FLOOR

DALZIEL HIGH SCHOOL, MOTHERWELL.
Mr. S. B. RUSSELL, F.R.I.B.A., Architect.



A MANSION PROPOSED TO BE ERECTED IN SUSSEX. MR. A. N. PRENTICE, F.R.I.B.A., Architect.

PROPOSED MANSION, SUSSEX.

The site of this proposed mansion faces due South, and is at present occupied by a large house of the Mid-Victorian period. It is intended to pull down the present buildings and to erect a more convenient house to suit the requirements and tastes of the owner, who desires simplicity of architectural detail and form, combined with ample accommodation and luxury so far as the number of rooms is concerned. The unusual, yet pleasing, form which the plan takes, was evolved from previous sketch-plans, with wings placed at an angle in order to obtain the full benefit of the morning, midday, and afternoon suns. The ground-floor, containing the principal reception-rooms, kitchen offices, etc., is designed to be on the same level as the forecourt, and is raised above the garden front by means of terraced arcades, intended to be constructed of local stone. Underneath the Eastern terrace a large swimming-bath is to be placed, and the corresponding portion of the terrace to the West is to contain a grotto and plant-house. There is also a basement under the kitchen wing on the level of the kitchen court, providing further accommodation for servants, such as sitting and sewing-room, and menservants' bedrooms. The first-floor is intended for suites of rooms for guests, containing bedrooms, dressing-rooms, and bathrooms; while the second floor is to be solely occupied by the owner and his family. The maidservants will partly be accommodated in the Eastern wing of the first- and second-floor plan. The Western wing of the second-floor forms in itself a sort of "bijou flat," with sitting-rooms, kitchen, cook's bedroom, etc., intended for the owner's use should the rest of the mansion not be occupied. The further development of the interesting scheme has been postponed owing to the war, and the whole of the project is at present in abeyance. The drawing given among our plates to-day is now in the Royal

Academy Exhibition. Mr. Andrew N. Prentice, F.R.I.B.A., of Hastings House, Norfolk-street, Strand, is the architect.

A SMALL SOCIAL CLUB FOR AIRMEN.

These designs, submitted in connection with the BUILDING NEWS Designing Club, will be found described in our referee's report on another page.

Jeremiah O'Rourke, architect, died at his home in Newark, New Jersey, on April 22, at the advanced age of 82 years. Mr. O'Rourke had practised his profession in Newark for more 50 years.

On the motion of Mr. E. Guy Dawber, Hon. Secretary R.I.B.A., the Council of the Royal Institute of British Architects unanimously agreed that a tablet or board be fixed in a conspicuous position in the premises 9, Conduit-street, W., containing the names of all architects who are serving with His Majesty's Forces during the War.

Mr. Courtney Clifton, M.Inst.C.E., on behalf of the Local Government Board, held an inquiry at the Council Offices, Cannon, on Thursday week, into an application of the urban district council for sanction to a loan of £10,675 for the purpose of providing working men's dwellings. Mr. R. Blanchard (surveyor) said there were 6,015 houses in the district, of which 4,830 were rented at £16 per annum or under. The population per house in 1901 worked out at 5.33, in 1911 at 5.23, and at the present time it was estimated at 5.15. With regard to the proposed scheme, 16 houses would be let at a weekly rental of 6s., and 28 at a rental of 7s., and it was estimated that the deficiency to be met out of general district rate would be £38 17s. 4d. Two sites had been selected, one in Belt-road at Hightown, and the other in Beech Tree-lane, Cannon. On the former site 24 houses would be erected, and 20 on the latter. Evidence in support of the scheme was also given by Dr. W. H. Clendinnen (medical officer of health) and Mr. J. Turton (sanitary inspector), who gave details of overcrowding in the district, and expressed the opinion that there would be no difficulty in letting the houses at the rents proposed.

PROFESSIONAL AND TRADE SOCIETIES.

FACULTY OF SURVEYORS OF SCOTLAND.—Intimation has been received from the Secretary to the Treasury that in future passing examinations of the Faculty of Surveyors of Scotland shall be regarded equally with the passing of the examinations of the Surveyors' Institution as affording prima-facie evidence of suitability for appointment to permanent positions under the Government.

LEEDS AND WEST YORKSHIRE ARCHITECTURAL SOCIETY.—The annual general meeting of this society was held on Monday night at the Leeds Institute Mr. G. F. Bowman presiding. The annual report mentioned that 50 per cent. of the Associate members of the society were serving with the Colours. Mr. G. F. Bowman was elected president for the ensuing year; Messrs. J. F. Walsh, L.R.I.B.A., and C. B. Howdill, A.R.I.B.A., vice-presidents. Mr. R. Fielding Farrar, A.R.I.B.A., hon. treasurer; and Mr. W. Whitehead, A.R.I.B.A., hon. secretary.

Mr. Robert Parry, retired builder, died on Sunday at his residence, Mere Villa, Monk-street, Everton. The deceased, who was in his seventy-seventh year, was a well-known figure in Everton. He was a native of Halkyn, Flintshire; but at the early age of fourteen he went to Liverpool and obtained employment in the building trade in which he was very successful.

The pavilion and gardens just constructed at Trent Bridge, Nottingham, were opened on Whit Monday. The auditorium seats 1,000 people, and gives access, on the south side, to a covered promenade, which will accommodate another 500. From the raised tea balcony, which seats 100 people on the north side, one can view both the river and the stage. Below this balcony is a verandah, open to gardens. The stage is 20ft. wide, 25ft. deep, and 18ft. high, while the proscenium is 30ft. wide and 16ft. high.

609-610





A COUNTRY HOUSE IN THE EASTERN STATES OF AMERICA.—MRS.

MAY 28, 1915.



EASTERN STABLES OF U.S.A.

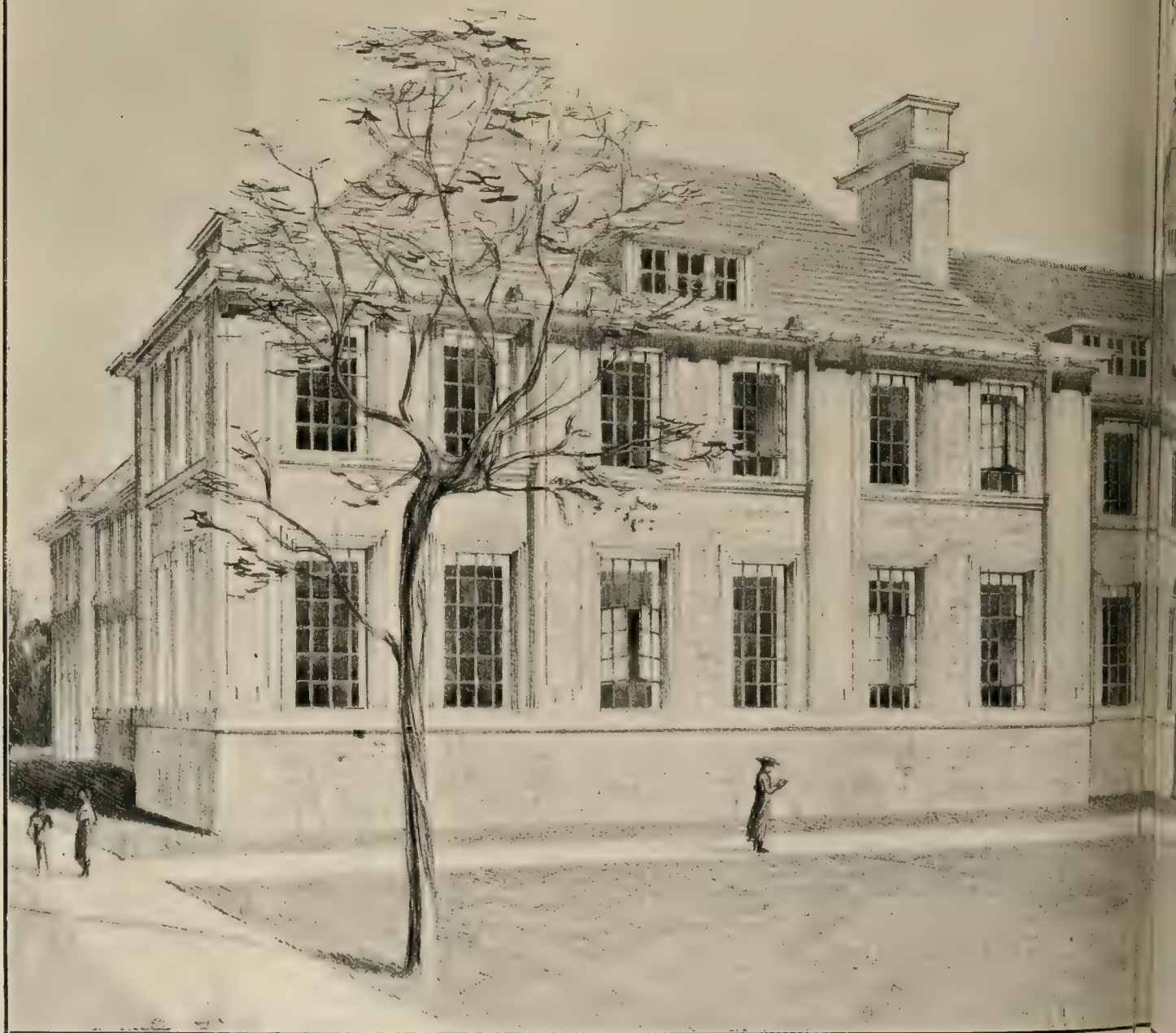
POYNTER & WENYON,
9 SOUTH MOLTON ST. W.

JOSEPH POYNTER, F.R.I.B.A., and GEO. H. WENYON, Licentiate R.I.B.A., Architects.

613-616



DALZIEL - HIGH - SCHOOL
MOTHERWELL . S.BRUSSELL, F.R.I.B.A .

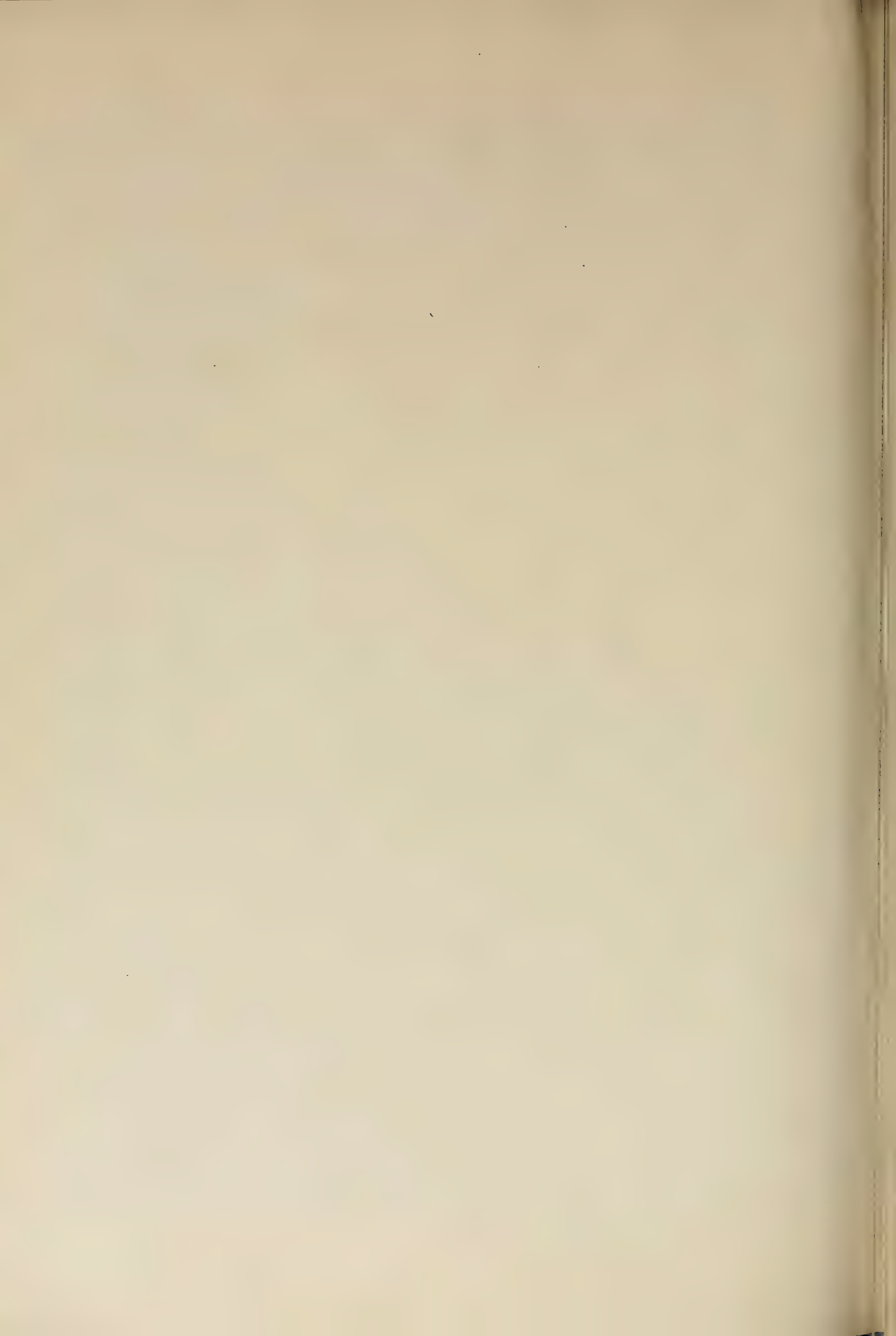


DALZIEL HIGH SCHOOL, MOTHERWELL

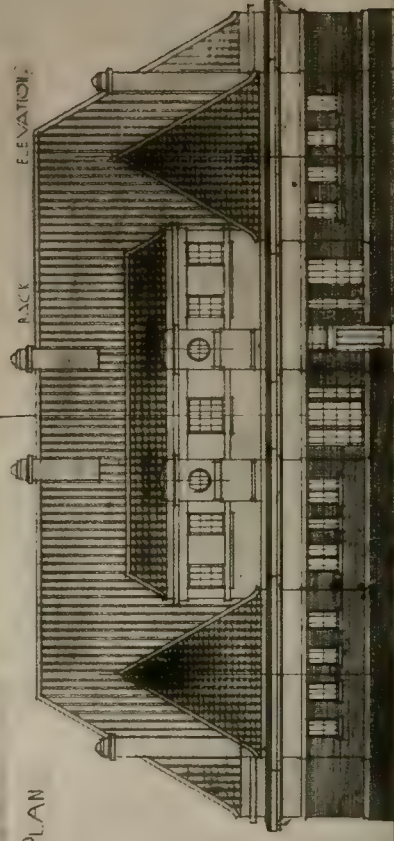
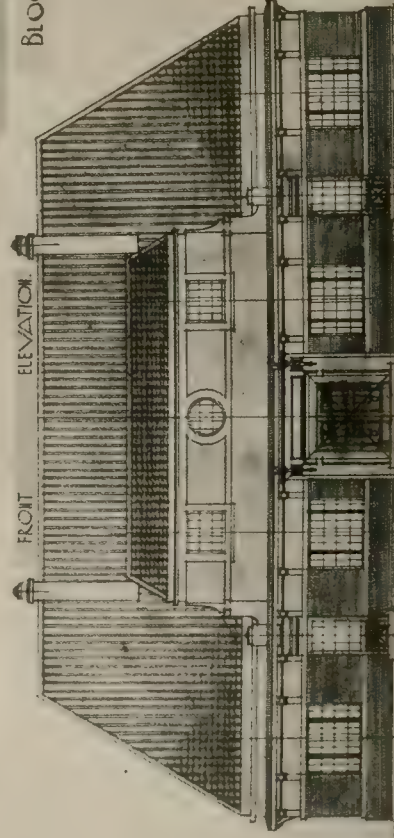
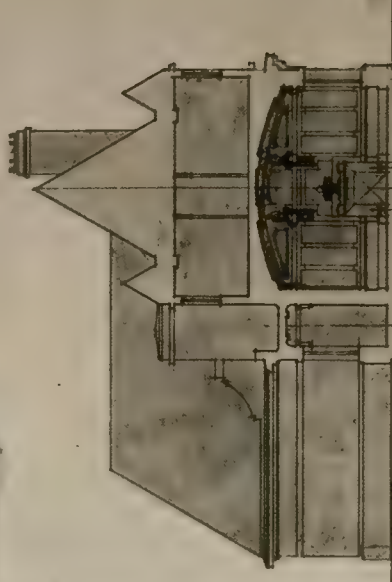
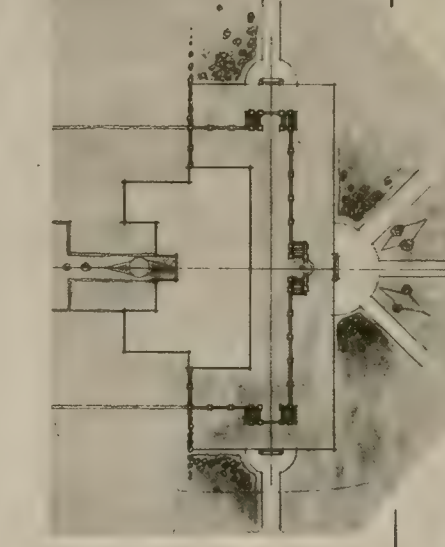
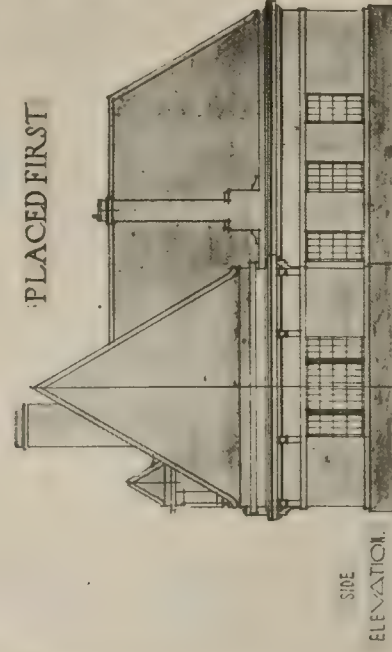
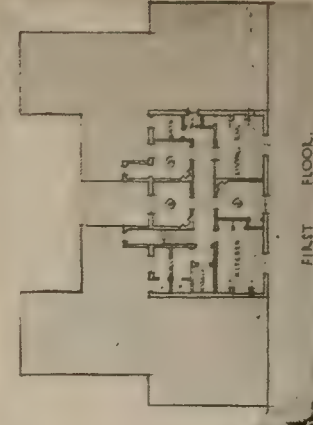
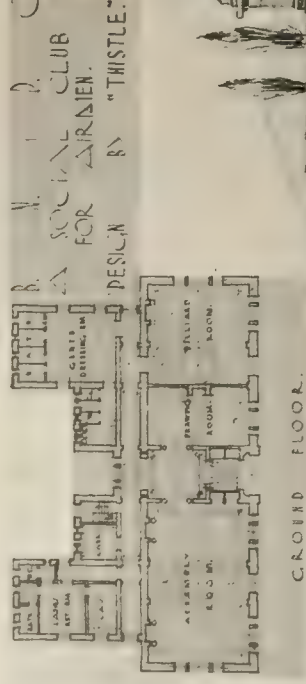
MAY 28, 1915.



M. S. B. RUSSELL, F.R.I.B.A., Architect.



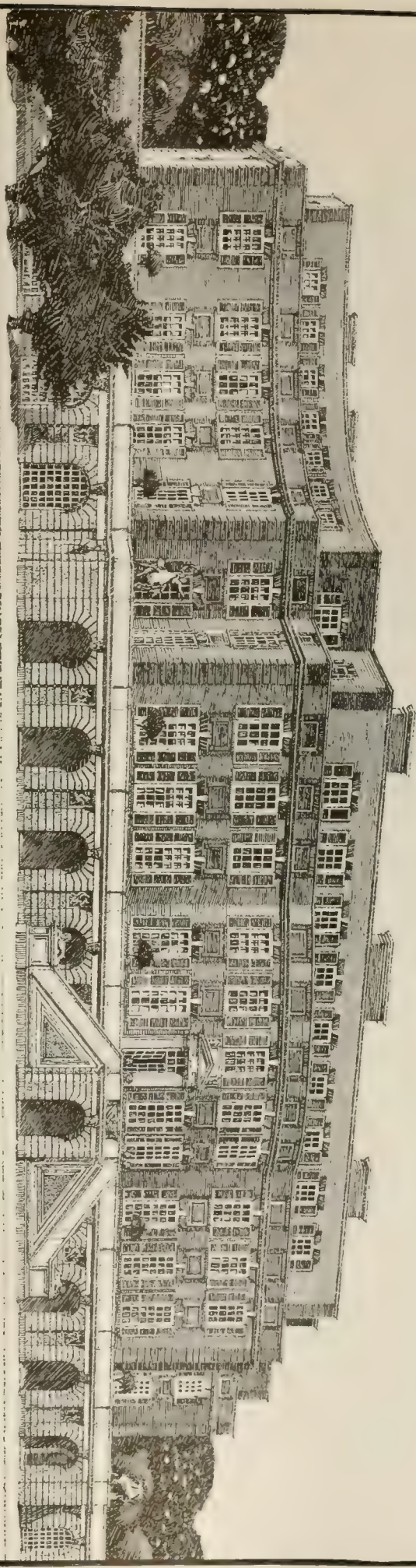




"BUILDING NEWS" DESIGNING CLUB: A SMALL SOCIAL CLUB FOR ARMEN.—Design by "THURSTLE" (Placed First).

THE BUILDING NEWS, MAY 28, 1915.

PROPOSED MANSION, SUSSEX



A MANSION PROPOSED TO BE ERECTED IN SUSSEX.—MR. A. N. PRENTICE, F.R.I.B.A., Architect.



Currente Calamo.

We wish all success to the National Government, and confusion to all factious people who may seek to hinder its work. We venture to hope that Mr. McKenna may find himself able to render justice to builders, and that Mr. Harcourt at the Office of Works may make no more timber contracts of the sort there is no need to say more about. We trust that the record of the new Cabinet may induce the nation to demand presently that the precedent set shall be followed, and that we may see an end of party government, which has degenerated of late years into government by faction and the caucus. Why, indeed, should not the King call to his councils the best men of all opinions, and end the mere window-dressing which has done duty for public policy for years past? It would release us from the mischief-making of cliques, end the evil influence of a decadent, often corrupt, and not infrequently venal, party Press, restore the independence of the ordinary Member of Parliament, who to-day is a mere pawn in the hands of the wire-pullers, and form a safe base on which to build the Imperial Council which the Britains beyond the seas will assuredly demand shall embrace the whole Empire. Let us all see to it that the great lesson the War has taught us is not thrown away, and that unity of purpose by honest men of all opinions shall be the main-spring of the political machine hereafter.

"Unfit for human habitation" is a phrase that often occurs in our statutes. Yet it is one of many meanings as applied to houses. Where a building is defective in itself, as regards drainage or state of repair there is no difficulty. But an important principle just laid down by the House of Lords ("Hall v. Manchester Corporation") throws a new light upon the whole subject, and opens up large questions as to condemning old premises, and thus of rebuilding them on modern lines. Under an Act of 1867 the corporation had closed three houses belonging to the appellant. These had been built about 1860, in compliance with the then regulations, and not since structurally altered. They had been occupied for over 50 years for business and residence, and no harm had come to the occupiers, nor was there any increased sickness or death-rate. They were now in fair repair and had good drainage. The only ground of their condemnation was that they were unfit for human habitation by reason of their original grouping—i.e., their closeness and contact not leaving enough open space for proper and modern ventilation. The Court of First Instance had decided against the order of the corporation; but this was reversed by the Court of Appeal, whose judgment is now finally confirmed by the House of Lords. This ruling decided that a house may be "unfit for human habitation" not only owing to defects in its building, but by its being so situated that it has not a sufficient access of air. In other words, old houses are now liable to condemnation because they were not built in accordance with modern hygienic ideas, which were not known at the time of their erection. This opens vistas of much rebuilding—which should encourage our architects and contractors.

The *British Review* records an experiment recently made at Toynbee Hall "to take

mature men, mostly over the age of forty, and teach them a new trade." The furniture trade, being hard hit by the war, was suffering from a glut of workers. The leather trade was experiencing an unprecedented scarcity of hands, owing to the demand for leather stitchers for military accoutrement work for the British, French, and Russian Governments. Some of the residents at Toynbee Hall hit on the idea of deliberately transferring men from one trade to the other. The Prince of Wales's Fund produced the money needed to equip the school and maintain the scholars, and the school was opened on December 7. The experiment was justified. Out of 139 scholars enrolled up to January 15, only two men were sent away from the school because of their inability to learn a new trade, and fifteen left because they had got work at their old trade. Every man who has had a full month's training at the school has found work, while some of the men have got good regular work after a fortnight. The average wages earned by the men who have found work are between 30s. and 35s. Some are earning £2 a week, and a few as much as £3. More could certainly be done on these lines. The passive surrender of most Englishmen to idleness because there is no work to be had "in his trade"—often a calling which hardly deserves the name—is as cowardly as it is calamitous.

Our lamented late old friend, Mr. W. G. Sutherland, the secretary of the National Association of Master House Painters and Decorators, was to have opened a discussion on the report of the Departmental Committee on White-lead, at the rooms of the Society of Arts, Adelphi, London, W.C., on Tuesday, June 1, at 8 o'clock. The meeting will be held under the auspices of the Incorporated Institute of British Decorators, the Society of Arts Rooms being used for this occasion, owing to the fact that the Painters' Stainers' Hall is being redecorated, and also in order to accommodate a larger audience. All interested in the subject of white-lead are invited to attend this meeting. It will be perfectly evident in reading the report on white-lead that dry rubbing down should be abolished. This, at least, is the opinion on which all the members of the committee agree. It may be pointed out, remarks the *Decorator*, that painters would find it to their advantage to at once do away with dry-rubbing down. Of course, on old work pumice-stone and water are usually employed, but on other work the danger can be very materially lessened by dampening the glass-paper with turpentine. This is a practice which is frequently carried on in America. It is found that the turpentine cuts the paint quicker than if used dry.

Cabinet changes are not without their minor disagreeables to Ministers, and their wives. A correspondent of the *Manchester Guardian* says:—"Before the consulship of Gladstone a silver inkstand was the heirloom which came down to the children of past Cabinet Ministers; but that custom no longer holds. In one sense the upheaval is much smaller than usual, because the majority of those with official residences are staying in, so that there will not be very much furniture-moving. This is as well, because the house moving part has been known to disturb the equanimity of the great ones, and led to a quite undignified little wrangle between Gladstone and Disraeli as to the valuation of the

official furniture and robes at No. 11, Downing-street. It is said, too, that the wives of the outgoing Ministers feel the departure from official residences. "I hope I am not avaricious," one is reported to have said, "but I must say when one was hanging pictures it was very pleasant to have the Board of Works carpenter and a bag of the largest nails for nothing."

Bank Holiday visitors to Hampton Court Palace were able to see the first fruits of the scheme for cleaning and restoring the magnificent tapestries in the great hall and in the withdrawing-room. So far the work has been confined to one of the 17th-century set representing scenes from the lives of the Apostles, which constitute a feature of the withdrawing-room. Sixteen women workers from Paris have been engaged on this piece for two years, and some indication of the nature of the task is conveyed by the statement that one and a half inches is counted as a good day's work. The result seems satisfactory in every respect, and the renovated tapestry stands out in striking contrast to its companions and to those in the great hall illustrating the Life of Abraham, which in turn will receive attention.

A War Exhibition has been organised to assist the funds of the Belgian Red Cross Anglo-Belgian Committee, whose patroness is H.M. the Queen of the Belgians. A striking feature is a magnificent 13,700sq.ft. mural panoramic representation of Belgium. This portrays, amongst other scenes, the beauties of Brussels, Antwerp and its magnificent port, Bruges (the Venice of the North) with its many bridges, Ghent, Ostend and the Coast, Liège, Namur, and the Valley of the Meuse, including the ill-fated Dinant, Louvain, Malines, Ypres, and Visé, the first town to fall temporarily under the iron heel of the barbaric Hun. The exhibition comprises seven sections, each of which is of importance and interest, the whole forming a comprehensive War Exhibition. It will include: Trophies of War; Armament and Ammunition in the Making; Red Cross Work, Hospital and Nursing; Science and Industry as Applied to War; Food and Hygiene; Equipment; and a Maritime and Aerial Section. The Prince's Skating Club, Knightsbridge, S.W., has been selected as the place in which to hold this exhibition. Offers of interesting war trophies as loan exhibits, or assistance of every kind towards making the exhibition a great success, will be welcomed by the Hon. Organising Secretary, War Exhibition, London Chamber of Commerce, 97, Cannon-street, London, E.C.

The first sod for the building of a new parish hall and temporary church of St. Barnabas at Temple Hall, Golder's Green, has been cut. The estimated cost is £2,200. The architect is Mr. J. S. Alder, 1, Arundel-street, Strand, and the contractors are Messrs. Mattock Brothers, Wood Green.

The death is announced, at Ferndene, Kirriemuir, of Mr. Donald Ross, road surveyor. On the transference of Mr. James Moncur, road surveyor, to be county surveyor of Staffordshire, Mr. Ross was appointed road surveyor of the Forfar district highways in 1890, and has resided in Kirriemuir ever since.

The Local Government Board has sanctioned the sewerage scheme for the added areas of Kidderminster, but declines, under existing circumstances, to authorise the loan of £31,000 required for the execution of the works. The town council has decided to represent that certain portions of the scheme are of extreme urgency from the public health point of view.

OBITUARY.

Mr. Robert Fellowes Chisholm, F.M.U., F.S.A., F.R.I.B.A., late consulting architect to the Government of Madras, died on Sunday at "Woodend," Queen's-crescent, Southend, where he had resided for several years past. He was a Fellow of the University of Madras, for whom he had designed a group of buildings. For some years after his retirement from his appointment in India, Mr. Chisholm practised his profession in London, and carried out a Church of Christ Scientist in Sloane-square, and prepared a design for an Indian Museum proposed to be erected in Belvedere-road, Southwark. He joined the Royal Institute of British Architects in 1871, and was transferred to the retired class three years ago. He read several papers before the Institute, and frequently took part in discussions on questions of Oriental architecture.

Mr. J. Arthur Reeve, of 10, Queen Anne's-gate, Westminster, an ecclesiastical architect, has died at his residence, Yarrow Bank, Kingswear, Devon. Born in 1850, Mr. Reeve received his training under the late William Burges, A.R.A., and from the first gave promise of unusual artistic ability. St. Mark's Church, Salisbury, is now approaching completion from his plans, and is to be dedicated in the coming autumn. He had been a member of the London Architectural Association since 1868, and in earlier years contributed to the *A.A. Sketch Book*.

Widespread sympathy will be felt for Mr. Edward C. P. Monson, J.P., F.R.I.B.A., President of the Society of Architects, and with Mrs. Monson, on the death of their fifth and youngest son, Second Lieutenant Cyril Archibald Monson, 2nd Wiltshire Regiment, who was killed in France on the 17th inst. Mr. C. A. Monson, who was 28 years of age, was an Associate of the Institute of Chartered Accountants, and joined the Territorial Force in February, 1909. He went to France at the beginning of November last with his regiment, the London Rifle Brigade, and served continuously with the 1st Battalion until he was given a commission in the 2nd Wiltshires. Upon joining his new regiment he volunteered for the post of officer-in-charge of the regimental bomb-throwers, and it was while leading them that he met his death.

Lieutenant Christopher René Harrison, L.R.I.B.A., died on Whit-Sunday at the Military Hospital No. 7, Boulogne-sur-Mer, of abdominal wounds sustained in a night attack near Festubert on the previous Monday. He was the youngest son of Mr. Frederic Harrison, and was commissioned in the 3rd Leicestershire Regiment, Special Reserve, in September. Going to France, he did duty with the Regular 2nd Battalion. An architect by profession, a fine sportsman and soldier, he did well in his regiment. His father was with him at the last, and attended the military funeral. The late officer's brother is Mr. Austin Harrison, editor of the *English Review*. Mr. C. R. Harrison, who was born on April 27, 1877, was educated at Clifton College, and took his B.A. degree at Merton College, Oxford. Having been for many years in the office of Sir Thomas G. Jackson, R.A., he followed his profession of architect, both in Sicilian-avenue, Bloomsbury, and in the Argentine. He had been a Licentiate of the Royal Institute of British Architects since 1911. Returning home on the eve of the war, he obtained a commission in the Leicester Regiment, being gazetted on August 15 last, and later promoted to lieutenant. He crossed to France twice with details, and had been at the front since February.

Mr. Robert J. Stirling, M.A., B.E., F.R.I.A.I., died at his residence in Pembroke-road, Dublin, last week, after a long illness. He was architect and surveyor to Trinity College, for whom he carried out the reconstruction of the New-square at the college and business premises in Lincoln-place. Another of his recent works was the reconstruction of the Queen's Theatre, Dublin.

Building Intelligence.

BAMBER BRIDGE.—Last week the Bishop of Manchester dedicated the new nave and west end of St. Aidan's Church, Bamber Bridge, near Preston. The new portion consists of nave and side-aisles and west end, baptistery, and porch, and provides additional accommodation for 264 worshippers, making the total 686. The west end faces the main road between Preston and Chorley, and has a large five-light tracery window, and three similar three-light windows in each side of nave, which is wide and lofty, the side-piers and arches all of red Rainhill stone. The style is Decorated Gothic, and the architect is Mr. Frank R. Freeman, Bolton, whose drawing of the church is hung in the Royal Academy this year. The contractors were Messrs. E. Lewis and Son, of Blackburn; and Mr. A. C. M. Lillie, of Bamber Bridge, is the clerk of works.

BRISTOL.—The new headquarters of the Bristol Branch of the Royal Colonial Institute was formally opened by Earl Grey on Wednesday week. It has been built at the sole cost of Mr. T. J. Lennard from plans by Mr. Norman G. Bridgman, A.R.I.B.A., of the firm of Messrs. Bridgman and Bridgman, of Bristol, Torquay, and Paignton, and was illustrated in our issue of August 8, 1913, by plans and perspective. The site is next the Victoria Rooms, in Whiteladies-road. The principal façades are of Bath stone, and emblems of the Empire have been introduced as ornaments, while Australia, Canada, India, and Africa are carved on hemispheres borne by figures of Atlas, surmounting panel pilasters at the principal angles. The Royal Coat of Arms occupies a prominent position. The entrance-lobby, lighted by a domed lantern, and the stair-hall, are divided by swing-doors, and are paved with black and white marble. The reception-room on the ground-floor has a floor area of 800 square feet, and a semi-circular bay window, fitted with leaded glass, in which is introduced a stained-glass reproduction of the City Arms. An oak mantel-piece and overmantel surmount the marble fireplace. The dado of this and the main rooms above is of panelled oak, and the floor of hardwood parquet. The first-floor accommodation includes a salon, 36ft. by 22ft., with a semicircular bay window at one end, and a raised platform at the other. The third principal apartment is on the floor above. Here is a library, with 350 volumes, as a nucleus sent from London. Casement windows lead to the balcony over the bay windows. In addition to the open-well grand staircase of teak, there is a fireproof staircase, with connections at each floor with the principal staircase landings.

EDINBURGH.—Last Saturday the first of the Western spires of St. Mary's Cathedral, recently completed, was dedicated. The cost of the two spires, which amounts to about £12,000, is being met by voluntary subscriptions. When both are finished they will rise to a height of 209ft. from the street, the central spire being nearly 80ft. higher. The completed spire corresponds, of course, with the rest of the cathedral, which is in Early Pointed, the style adopted by Sir G. Gilbert Scott, the architect, as uniting the architecture of Scotland with that of the North of England. It stands on the southern flank of the west gable. Four carved figures stand in niches on the sides of the square tower, just below the point where the octagonal spire springs from between four corner pinnacles. These figures represent St. Andrew the Apostle, St. Columba, St. Kentigern, and St. Margaret of Scotland. The work of erection has been carried out under the supervision of Mr. C. M. Oldrid Scott, London, grandson of Sir G. Gilbert Scott, in accordance with the latter's original design. The contractors are Messrs. E. C. Morgan and Son, Glasgow; and Mr. E. C. Morgan, as a hale and hearty octogenarian, is now himself carrying to its completion the erection of the building for which at its first inception he acted as clerk of works during the years 1872 to 1879.

SOUTHAMPTON.—A new Gaiety Picture Theatre has been built at Southampton in the High-street. Messrs. Jurd and Sanders are the architects. The site has been ingeniously dealt with, but its odd shape curving along the frontage of Albion-place hampered the lay-out, and the exigencies of a shop in the main front of the premises could not have facilitated the entrance treatment. The vestibule and entrance-hall, so far as space would allow, are well set out, and a large gallery from side to side extends above. The proscenium end of the theatre tapers off on both sides, so as to fit the site and give a balance to the interior, the exit staircase being to the rear most conveniently devised. The style of the High-street elevation is Moorish, with two flanking turrets. The lounge on the upper floor is oak-panelled to a height of 8ft., and in the wall space above between the piers a series of tapestry-like hunting scenes occur on backgrounds of deep green foliage with figures in reddish tints, the proscenium front and piers being finished in browns, the object being to set off the display of cinema pictures to advantage and secure a warm effect to the building. The curtain is worked from the orchestra by special machinery. The theatre seats 850 persons. The builder is Mr. John Nicol, of Southampton.

The partnership heretofore subsisting between E. H. Payne and R. W. Yates, architects and surveyors, at John-street, Bedford-row, under the style of Harding Payne and Yates, has been dissolved.

Mr. Courtenay Clifton, an inspector under the Local Government Board, held an inquiry at Newbury on Wednesday into an application from the town council for a loan of £1,800 for the provision of workmen's dwellings.

At a special meeting of the town council of Newark-on-Trent, forty applications for the post of borough surveyor were considered. The council's choice fell upon Mr. J. E. Wilkes, A.M.I.C.E., who holds the post of deputy borough engineer of Northampton.

William Langley Morrison, architect, died at his home in Boston, Mass., on April 19, in his fifty-second year. Mr. Morrison first entered the office of Andrews, Jaques, and Rantoul. Subsequently he was connected with Morrison and McEwen, and at the time of his death was of the firm of Little and Brown.

The Local Government Board having refused to sanction a loan by the Selby Urban District Council for building houses for the working classes, the council have appointed a deputation consisting of the chairman and the clerk to wait on the Local Government Board and point out the great need for the houses.

Mr. William Bengier, the artist, whose death, in his seventy-fifth year, at the Grange, Fittlewell, is announced, exhibited four pictures at the Royal Academy—the first in 1890, entitled "Evening Among the Hills," and the second in 1900, "Early Autumn near Bettws-y-Coed." Two other landscapes were hung at Burlington House in 1907 and 1913 respectively.

Lieutenant Edgar J. A. Carr, 5th Battalion Royal Lancaster Regiment (T.F.), who died on May 18 of wounds received near Ypres on May 6, aged forty-one, received his commission last November, and had been out at the front only about three weeks. He leaves a widow and two children. Mr. Carr was the managing director of the firm of Dilworth and Carr, heating apparatus manufacturers, of Preston.

The current issue of the R.I.B.A. Journal states that the total number of members of the Royal Institute who have joined H.M. Forces for the period of the War is 41 Fellows, 269 Associates, 115 Licentiates, 2 Hon. Associates, and 145 Students. There being approximately only 1,694 Associates on the roll, as compared with 2,045 Licentiates, the much larger relative proportion of Associates who have enlisted is remarkable.

Subject to certain legacies, the bulk of the estate of Sir Hugh Lane, who went down with the Lusitania, mainly consisting of pictures of considerable value, is bequeathed to public galleries in Dublin and London. About twenty years ago Sir Hugh Lane started as a picture dealer, under the tuition of the late Mr. Martin Colnaghi, one of the shrewdest judges of pictures in London, in a court off St. James's-street. For many years past his business had been entirely conducted from his private residence in Cheyne-walk, Chelsea.

Correspondence.

THE R.I.B.A. AND BELGIAN HISTORIC BUILDINGS.

To the Editor of the BUILDING NEWS.

SIR,—At the present time, when public attention is so much directed to the destruction of historic buildings in Belgium, I wish to bring before your readers the fact that a committee has been appointed by the Council of the Royal Institute of British Architects to form a collection of records of these. The Council is of opinion that this collection must include all buildings of historic interest in Belgium, in view of the uncertain course of future events.

I now appeal to all those who possess photographs, measured drawings, sketches, old prints, plans of towns, illustrated guide-books to individual towns, to present these to the R.I.B.A., where they will be embodied in a branch of the library, with a special catalogue for reference. The collection when completed will be accessible at the same hours and under the same conditions as the rest of the library. It is hardly necessary to add that Belgian architects will be particularly welcome to the use of the collection.

The Council is especially anxious to obtain gifts of photographs taken by visitors to the smaller towns of Belgium, such as, by way of example, Nieupoort and Furnes, where there are often churches and houses of great architectural interest which are not illustrated in standard books on the architecture of Belgium.

The Council feels that such a collection brought together in one institution would be of permanent value to all interested in the art in Belgium.

All gifts should be addressed to Mr. Martin Briggs, A.R.I.B.A., hon. secretary of the Belgian Architectural Records Subcommittee, at the Royal Institute of British Architects, 9, Conduit-street, W., by whom they will be acknowledged.—I am, etc.,

ERNEST NEWTON,

President R.I.B.A.

Royal Institute of British Architects,
9, Conduit-street, Hanover-square, W.,
May 27, 1915.

"EXPELLED FROM THE ORDER."

SIR,—I was glad to read the letter in your last week's BUILDING NEWS, signed "F.R.I.B.A.," referring to the fact that the casting vote of the President of the R.I.B.A. defeated Mr. Max Clarke's motion demanding the retirement of the German and Austrian architects, Hon. Corresponding Members of the Institute.

I quite agree with the writer of the letter that the President was actuated by the best intentions in the world when he gave his casting vote, and that was in January last.

In my review upon the R.I.B.A. Annual Report I expressed the wish that the roll of the members of the Institute should be reduced by fifteen, being the Germans and Austrians above referred to.

For terseness and truth, I do not think the following extract from an article in the *New York Tribune* of the early part of this month could be bettered. It runs as follows:—

"A WILD BEAST IS LOOSE IN THE WORLD.

"Many millions will regret that no American soldiers are in those lines doing America's part in the battle to defend civilisation; for let no one mistake the fact—'a wild beast is loose in the world'—a creature combining the ferocity of the animal with the lust of the degenerate human being."

As I said at the Institute when Mr. Max Clarke brought forward his motion, I do not know that any of the Hon. Corresponding Members above referred to are personally engaged in the War against us, and, on the contrary, I do not know that they are not; but what I do know is that they are members of the same barbaric race which has disgraced, and is still further disgracing, the very name of human beings.

I trust, with the writer of the letter, that steps will be immediately taken at the Institute, not only to ask these Germans and Austrians to retire, but that they shall be absolutely and definitely expelled from the roll of our membership.—I am, etc.,

WM. WOODWARD.

13, Southampton-street, Strand, W.C.,

May 25, 1915.

ANCIENT LIGHTS IN ALBEMARLE STREET, W.

SIR, In your report last week on this case, under the above-named heading, you refer to the settlement which was arrived at between the parties—that the defendants were not to carry up their building "beyond the altitude from which a line drawn to the sill of the ground-floor window of the plaintiffs' premises would produce an angle of 42½deg. with their front wall."

As I was concerned in the case, perhaps you will allow me to say the 42½deg. is a misprint for 47½deg.—I am, etc.,

WM. WOODWARD.

13, Southampton-street, Strand, W.C.,

May 25, 1915.

Four new bridges will shortly be constructed across the Thames—one at Goring and Streatley, one at Windsor (the Albert Bridge), and two at Reading.

Amesbury Abbey, Wiltshire, is to come under the hammer of Messrs. Knight, Frank, and Rutley in September. The abbey stands on the site of the former monastic house, and the 6,400 acres of the estate to be sold includes Stonehenge.

Second Lieutenant Richard M. B. Gamble, of the 7th Battalion (T.F.) of the King's Liverpool Regiment, who has fallen in action in France, was the son of Mr. Sidney G. Gamble, F.S.I., A.M.I.C.E., who has been since 1892 second officer of the London Fire Brigade.

The death took place, at his residence, on Thursday week, of Mr. Edward Leach Grindrod, of 416, Whitworth-road, Rochdale. A native of Rochdale, he was sixty-three years of age, and for between twenty and thirty years had carried on business as a joiner and builder in the district.

Mr. William Morgan Cobbett, of Moulton Hall, Middleton Tyas, near Darlington, formerly of Carlton, Aldbrough, Yorks, land agent, who died on February 22, aged fifty-three, left estate valued at £42,004 gross, with net personalty £40,467. He was a grandson of William Cobbett, M.P. for Oldham.

The Commissioners of Richmond Bridge, having been assured by experts of the safety of the existing structure, have contracted for the entire covering of the bridge at its approaches with granite setting at a cost of £3,000. The work, continuing night and day, is to be accomplished in six weeks after the delivery of the granite.

The new Domestic Science School recently erected at Staple Hill, Bristol, was opened on Tuesday. The new school lies to the west of the Council school, and on an adjacent site. It is faced by a large school-garden, on which will be grown by the scholars the vegetables to be used in the cookery school. The new building comprises a kitchen fitted on modern lines, a pantry, an ironing-room, a sitting-room, and a fitted bedroom. The builder is Mr. Wilmott, of Cock road.

The Thames Conservators are proceeding with the erection of a gauge-weir at Hampton, on the site of the existing river-weir, on the Middlesex side of Kent's Ait. It will consist of a gauging-sill from 59ft. overall and four deep-sill sluices, with gangway and the necessary lifting tackle, together with a gauge-house containing float, well, and recording instruments. The cost of the work will be about £6,000, one-half of which will be defrayed by the Metropolitan Water Board.

Lieutenant Noël Waugh Hadwen, A.R.I.B.A., of the 3rd Battalion Duke of Wellington's Regiment, was recently invalided home, as he was suffering from the nefarious gas-poisoning adopted by the Germans. We are glad to hear that Lieutenant Hadwen, a partner with Mr. E. Guy Dawber, Buckingham-street, Adelphi, W.C., is now making good recovery. He has been a member of the Architectural Association since 1904, and joined the Royal Institute as an Associate half a dozen years later.

Our Office Table.

The Council of the Royal Institute of British Architects, in the exercise of the powers conferred on them by Clause 2 of the Supplemental Charter, 1909, has elected to the Fellowship of the Royal Institute Mr. Frank Darling, of the firm of Messrs. Darling and Pearson, Imperial Bank Building, Toronto. Mr. Darling, it will be remembered, is the Royal Gold Medallist elect for the current year, and it is expected that he will be present in person at the presentation on June 21.

The report of the Advisory Board of the Corporation of Manchester on the subject of air-pollution possesses interest as a record of the initial steps taken on municipally-organised lines to deal with the problem of smoke-abatement. The work of the board is entirely directed to research and to spreading information as regards smoke-abatement methods. The investigations now in hand are as yet incomplete; but it is already clear that valuable results are being obtained. In this report, which it is hoped will be the first of a series of annual reports, it is only possible to give particulars of the methods and aims of the work which is being undertaken. The present intention of the board is to endeavour to bring home to the public the seriousness of the damage done by smoke; to spread reliable information as to the best existing methods of smoke-abatement; and to discover, if possible, by research, new and improved ways of dealing with the problem. Methods, it is stated, are already known which, if more widely adopted, would greatly improve the state of the atmosphere without inflicting hardships on manufacturers or others. The board is convinced that the public do not yet realise either the economic cost of the smoke evil nor—what is more important—the effect it has on health and happiness through the mental depression which results from living in an atmosphere of gloom. Other industrial centres will keenly follow the results of Manchester's investigations.

A receiving order has been made in the case of Edward Oliver, of Meifod, Mont., builder and contractor.

New shelters, cliff-paths, and terraces on the Bournemouth sea-front were declared opened on Wednesday by the mayoress.

The late Mr. Hubert James Austin (73), The Knoll, Lancaster, architect, of Messrs. Austin and Paley, left personalty amounting to £38,997.

The Llanelly Rural District Council have spent £118,759 on pipes and labour in connection with the Llwynfan water scheme, and have a balance of £49,619 with which to complete the scheme.

A Local Government Board inquiry was held last Friday into the application of the Manchester Corporation for sanction to borrow £543,000 for an electricity-generating station at Barton-on-Irwell.

Mr. George S. Barry, of Dundee, has been appointed road surveyor to the Deer District Committee of the Aberdeenshire County Council in succession to Mr. Calvert, who has received another appointment.

Mr. Thomas Edward Williams, of Crosland Moor, has been appointed sanitary and housing inspector for the joint councils of Skelmanthorpe, Shepley, Shelley, Clayton West, and Denby and Cumberworth.

Of the eight candidates selected to appear before the council, Mr. Carter, of the Heston and Isleworth Urban District Council, has been appointed surveyor to the newly-created Beddington and Wallington Urban District Council.

At Wotton-under-Edge, last week, Mr. R. H. Bicknell, an inspector of the Local Government Board, held an inquiry as to an application from the parish council for leave to borrow £1,300 for the provision of a burial ground.

An agreement has been signed between the New South Wales Government and Messrs. Norton, Griffiths, and Co. for the construction of public works to the value of £10,000,000 within five years. The works embrace ten railways, two water-conservation schemes, and harbour works, and the enlargement of the main canal of the Murrumbidgee irrigation area.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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OUR ILLUSTRATIONS.

Messrs. Barclay's Bank at Luton, Bedfordshire. View and plans. Mr. Arthur Blomfield, M.A., F.R.I.B.A., Architect.

Sledmere, Yorkshire, the residence of Colonel Sir Mark Sykes, Bart., M.P. South-west front of the Hall as now rebuilt. View and plan of the Mansion. Mr. Walter H. Brierley, F.S.A., F.R.I.B.A., Architect.

New Cottages and Dairy Farm, Ewell Manor, near Maidstone. View and plans. Messrs. Geoffrey Lucas and Arthur Lodge, Architects.

The Pusey House, Oxford. Elevation of St. Giles' Street Front. Mr. Temple Moore, F.R.I.B.A., Architect.

Eastlary Manor House, Barkin, Essex. Details of the Great Stack in Courtyard. Measured and drawn by Mr. Hubert V. C. Curtis, Architect.

CHANGE OF DAY OF PUBLICATION.

On and after Wednesday next, June 9, the BUILDING NEWS will be published every week on Wednesday morning, at the usual hour, instead of on Friday.

At the moment the reason for the change is urgent. Owing to the interruption in traffic, we receive every week complaints from readers who cannot get their paper on Fridays owing to delay in transit.

But when quiet times come again we shall, in all probability, continue to publish on Wednesday. There are many reasons in favour of the change, not the least being the growing disposition to regard the Saturday as a *dies non* as far as business is concerned.

In any case, no one will suffer disadvantage if our readers and advertisers will make a note that all matter for publication, and advertisements, must reach us for the current issue in future by 3 p.m. on Tuesdays instead of Thursdays.

MAP-READING AND ROUGH MEASUREMENTS.

By STANLEY C. BAILEY, A.M.I.C.E., F.G.S.

The reading of maps, and methods of taking rough bearings, distances, and heights from them are very useful, especially to travellers and tourists; the following information may therefore be of some service to such, and also to many who have temporarily taken up military duties.

The English Ordnance maps are published to the following scales—viz., 1 in. to 1 mile = 5,280 ft. to lin., or a natural scale of 5,280 12 = 1 63,360 ; 6 in. to 1 mile

= 5,280 6 = 880 ft. to 1 in., and 880 12 = 1 10,560 ; and 25,344 in. to 1 mile

= 208,33 ft. to 1 in., or a natural scale of approximately 1 2,500 for parish plans, also

1 500 = 10,560 ft. to 1 mile or 500 12 = 41,66 ft. to 1 in. for town plans.

There are also the following general maps—viz., 1 1,000,000 or 1.013 in. to 16 miles, or 15.78 miles to 1 in., approximately 1 633,600 1 mile; which divided by 12 = 52,800 ft. or 10 miles to 1 in.;

1 126,720 = 2 miles per inch, 1 2 to 1 mile, or

1 253,440 to 1 furlong; and 1 253,440 = 1 4 per mile or 1 253,440 per furlong.

The scales of these maps are very convenient for English measurements, because the inch is divided into eighths, and so also is the mile into 8 furlongs, each furlong therefore = 5,280 8 = 660 ft., or 10 chains,

the chain being equal to 66 ft. or 22 yards (the length of a cricket pitch), therefore there are 80 chains to 1 mile, and every 1 8 in. on the 1 in. to 1 mile maps represents 1 furlong, or 660 ft., and 1 8 in. = 1 kilometre. In the 6 in. to 1 mile maps there are 48 eighths

of an inch. $\therefore \frac{48}{8} = 6$, or 1 6 in. per furlong;

and in the 25,344 inches to 1 mile maps, there are 25,344 8 = 3,168 in. to 1 furlong,

and 3,168 in. $\div 8 = 25,344$ eighths of an inch divided into 660 ft. = 26.04 ft. to 1 8 in., and 6 3,75 in. to 1 kilometre approximately. When calculating areas from maps it should be borne in mind that all maps show the country from a bird's-eye point of view, and all measurements are made on a horizontal basis, so that the true areas of lands can only be found from a map if the ground is fairly level; for instance,

if a field on sloping ground is 1,000 ft. by 1,050 ft. as shown on the map, and there is a rise of 100 ft. on the 1,050 ft. side, the area according to the map will be = 1,050,000 sq. ft., or 24.1 acres, an acre being equal to 43,560 sq. ft.; but the actual area will be = 1,000 ft. \times 1,096.6 = 1,096,600 sq. ft. = 25.17 acres; the length of the sloping side (*c*) being calculated by the formula $c = \sqrt{a^2 + b^2}$, in which *b* = the vertical height, and *a* = the length of the sloping side as measured on the map, or the horizontal length (Fig. 1). Land areas are usually measured with a steel chain 66 ft. long, and containing 100 links, and 10 square chains, say, 10 chains 1 chain = 1 acre, or 69.57 yds. by 69.57 yds., or, roughly, 70 yds., by 70 yds. = 1 acre; so that a field which measures 10.42 chains \times 5.61 chains = 58.45 square chains = 5.845 acres in area. When ground is surveyed for the purpose of making maps the chain is held horizontally, but when measuring areas it is laid on the ground, but the areas given on Ordnance maps are taken horizontally, and in the 1 2,500 scale maps 1 sq. in. = 1 acre.

In France and other Continental countries the standard of measure is the metre = 3.28 ft. = 1.093 yds. = 39.37 inches, a metre is therefore approximately 1 10 yds. in length, the excess in 100 metres for 1 10 yds. per metre being = 0.7 yds.

There are 10 millimetres (mm.) in a centimetre (cm.), 10 centimetres in a decimetre (dm.), and 10 decimetres in a metre, and the standard for land measurement is the kilometre = 1,000 metres = 3,281 ft. 1093.633 yds. = 1093.633 1760

= 0.6214 mile, or about 1 4 of a mile or five furlongs; 1 of a mile = 1,760 yds. = 1,100 yds., while 1 kilometre = 1093.63 yds., therefore, 1 4 of a mile will be 6.37 yds. in excess of a kilometre.

The Continental maps are usually based on natural scales of even decimal figures,

for instance 1 100,000 —, to reduce this scale

to English measurements, proceed as follows: — 100,000 12 = 8,333 ft. to 1 in., and

5,280 8,333 = 0.63 in. to 1 mile; $\therefore 0.63 \div 8$

= 5.04 eighths or, say, 1 8 per mile approximately. Or conversely, in a map to a scale of 1 5 per mile, 1 5 = 5,280 5 = 1,056 ft.

$\therefore 1$ in. = 1,056 8 = 8,448 ft., and 8,448

12 = 1 101,376 — natural scale.

To convert a scale of 80 ft. to 1 in. or 80 120 = 1 960 to a metric scale, proceed as follows—viz., 80 3.28 = 24.39 metres

to 1 in. Therefore, 100 metres = 100 24.39

= 4.1 inches, which should be divided into 10 equal parts, representing 10 metres each.

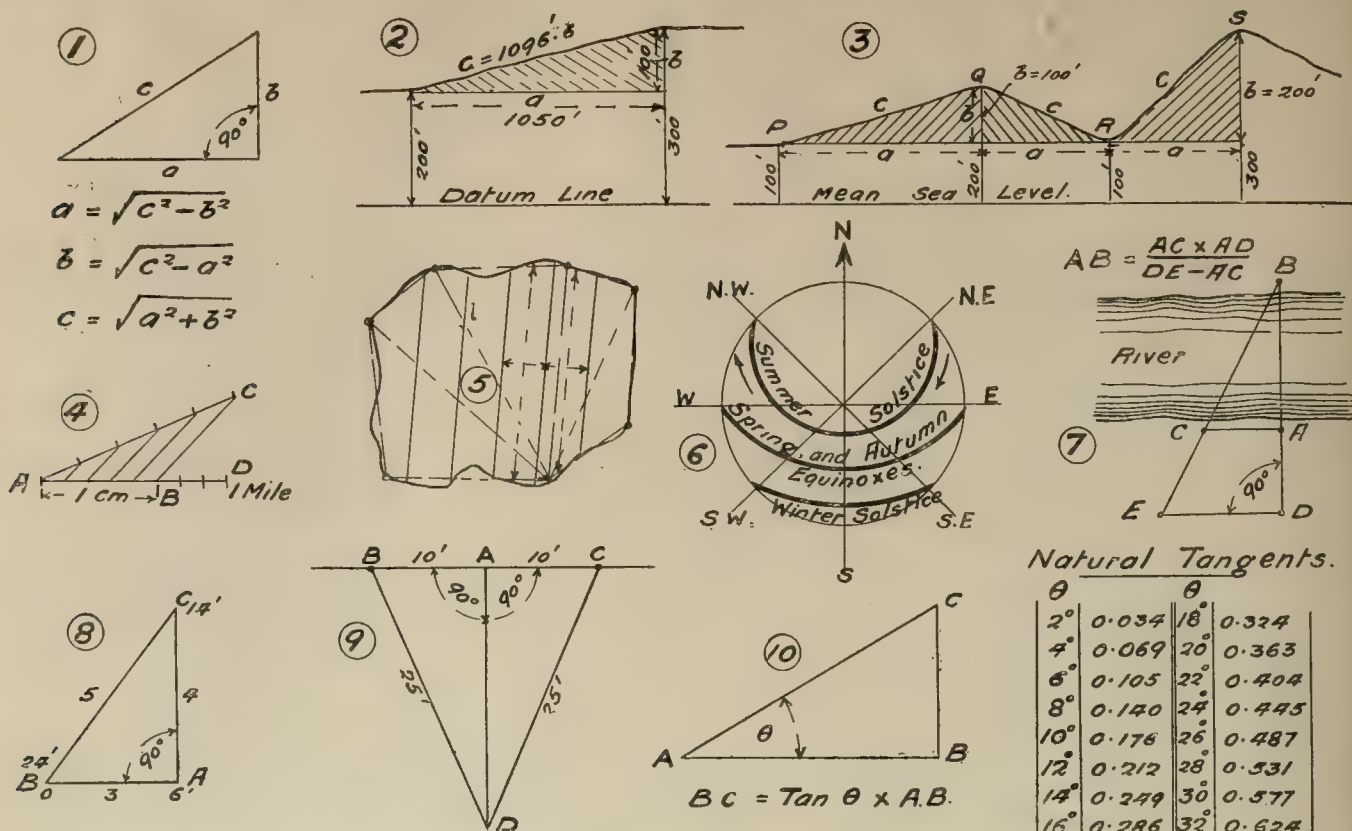
In Continental measurements, since 100 centimetres = 1 metre, then for a natural scale of 1 100,000 the scale of the map

would be 100,000 1,000 metres or one

kilometre = 1 centimetre or about 1 10 in., more accurately 0.393'. Similarly for a scale of 1 1,000,000 — there will be 10,000

metres to one centimetre, which, divided by 1,000, gives 10 kilometres to 1 centimetre.

The heights of the ground above mean sea-level or Ordnance Datum on the English maps is shown in feet and decimals of a foot, the datum for Great Britain being 0.65 ft. below the general mean level of the sea at Liverpool; while that for Ireland is low-water spring-tide level in Dublin Bay. On the Continent the heights are given in metres and decimals of a metre.



On the 1 in. and 6 in. to 1 mile British maps, contour lines are shown. These lines each represent a definite level, and are at intervals of 100ft. apart vertically. All levels or heights are referred to Bench Marks, which are shown on the 6 in. maps, thus B.M. 220.5. They are usually a few feet above the ground-level, and consist of a horizontal line with an arrow below pointing upwards, cut in the walls of buildings, &c., which are not liable to settle much; the centre of the horizontal line is the exact height above Ordnance Datum, and is corrected for the curvature of the Earth. Spot levels are also shown on the maps, these are levels taken at intervals along roads, &c. Rivers usually follow the lowest contour lines in valleys, the lines often running nearly parallel with a river for miles.

Suppose a contour line is 200ft. above the sea, and another is 300ft., or a rise of 100ft. in a distance of 1,050ft. between the two lines as scaled on the map, then the average slope of the ground will be $\frac{1,050}{100} = 1$ in 10.5ft., and the length of the slope will be $c = \sqrt{a^2 + b^2} = \sqrt{100^2 + 1,050^2} = 1096.6$ ft., where a , b , and c are the lengths of the sides of the triangle (see Fig. 2), (a) being the distance as measured on the map, and conversely $a = \sqrt{c^2 - b^2}$ and $b = \sqrt{c^2 - a^2}$. Should the contour of the ground be as shown in Fig. 3, then in order to find the actual length of the surface-line P, Q, R, S, the lengths of each of the sloping lines (c) shown in the shaded triangles, must be calculated by the formula already given, and added together.

To find the average slope of a field, fasten two laths, one, say, 3ft. and the other, say, 8ft. long, at right angles to one another to form a square, hold or fix the 3ft. length vertically by sighting with a building or other vertical object, the 8ft. lath being uppermost, and horizontal; if the end of this does not reach the slope, extend it with another rod until it does, then measure the

length of the horizontal lath, and if this is 10ft. the average slope will be $\frac{10}{3} = 1$ in 3.33ft.

It will be found very convenient to colour contoured maps with a dark shade of brown on the highest contours of the same level, working down with lighter shades for the lower contour levels, or distinct colours may be used for each of the various contour heights.

To reduce graphically a metric scale of kilometres to the English equivalents in miles and furlongs, suppose the scale of the map is one centimetre to a kilometre, line A B, Fig. 4 set off any inclined line A C; from end A, and mark off on this line to any convenient scale five equal divisions representing furlongs, five of which are approximately equal to a kilometre. Join the points C B, and draw the lines from the divisions parallel with C B to cut the metric scale. Take three of the divisions on the metric scale, and lay them off to B, D. Then A D will equal 1 mile to the scale of the map. The areas of land on the Continent are measured in ares, decares, and hectares; one are = 100sq. metres = 0.0247 acres, one decare = 1,000sq. metres = 0.2471 acres, and one hectare = 10,000sq. metres = 2.471 acres. Suppose the area of a piece of land is 1,250sq. metres, then $\frac{1,250}{100} = 12.5$ ares, or $\frac{1,250}{1,000} = 1.25$ decares, or $\frac{1,250}{10,000} = 0.125$ hectares, so that by merely shifting the decimal place, the required standard areas are obtained.

Areas of lands, if the boundaries are fairly straight, are best measured by dividing them up into triangles, the area of each triangle being equal to $\frac{1}{2}$ the length of the base, multiplied by the vertical height. Should the boundaries be irregular, the planimeter can be used, or a straight line can be drawn along the boundary with the help of a celluloid rule, so as to equalise the areas on either side of the line; or the

whole area may be divided up by parallel lines drawn equal distances apart, the mean lengths being taken between the lines, added together, and then multiplied by the width between the lines, as shown in Fig. 5.

When using maps in the field, if one has not a compass to obtain the direction, this can be found from the position of the sun or moon, for the following reason—viz., in the spring or at the Vernal Equinox (March 21) the sun appears to rise due East, and sets due West; this is also the case at the Autumnal Equinox on Sept. 22. At the Summer Solstice (June 21) the sun appears to rise in the North-east, and sets in the North-west, and at the Winter Solstice on Dec. 21 it rises in the South-east and sets in the South-west. The sun, moon, and stars in the Northern Hemisphere appear to take a southerly course across the sky, so that if the observer stands with his back to the sun at midday he will face the North, the East will be on his right-hand, and the West on his left; this is made clear by the diagram, Fig. 6.

The moon does not follow precisely the same apparent path as the sun, and in the Northern Hemisphere in winter, when the sun's course is low, the moon's path is high, the plane of its course being about 5deg. from the plane of the Ecliptic, or the apparent path of the sun; but her relative position in regard to the sun may be considerably more than 5deg.; the opposite is the case in the summer, for then, when the sun is high, the full moon's course is a low one—in other words, during the winter the full Moon appears to take very approximately the sun's summer course, and in the summer his winter course.

In the Southern Hemisphere the opposite is the case, the heavenly bodies appearing to move from East to West in a Northerly direction.

Should the sun not be visible, the approximate orientation may be established by noticing trees, the bark being often smoother and devoid of green "moss" on

the South or sunny side than it is on the Northern side, while flowers are generally turned towards the South, the stems bending in that direction. Ordnance maps and charts are plotted to the true North and South, or geographical Poles of the earth; but the compass-needle, of course, points to the magnetic poles, which are some distance away from the true Poles, the magnetic meridian is therefore at an angle with the true meridian; this angle is known as the variation or declination of the compass, and varies with the latitude and longitude of the place of observation. For the position of Greenwich the needle this year points about $14^{\circ} 15'$ west of the true North; the variation decreases from 8 to 9 minutes annually, but this also changes with the latitude of the place, and there is also a slight diurnal variation of from 7 to 12 minutes in the winter and summer respectively.

To find the approximate variation of the compass at any particular place, suspend a weighted string from the branch of a tree, or fix a thin stick upright in the ground. Then at 12 o'clock or noon, face the sun, and hold the compass with the South point on the card against the string, so that the shadow of the string falls across the compass card from South to North, then the angle of the needle from the North point on the card will be the declination; in the Pacific Ocean the variation is an Easterly one. The pacing of distances is an approximate and useful method of measuring. Of course, the length of a pace varies with the individual and the character of the ground, but the average is about 2' 6".

In the British Army the pace is 30in., with a cadence of 116 per minute; in the French and Austrian Armies it is $29\frac{1}{2}$, with a cadence of 115 to 130 per minute, and in the German Army it is $31\frac{1}{2}$, with 112 steps per minute.

Distances may also be approximated by watching the flash from cannon or of lightning, and counting the time in seconds until the report or thunder is heard. Then if the number of seconds counted be divided by 4.71 or, say, 5, the result will be the distance in miles, and if divided by 2.92 or, say, 3, the distance will be in kilometres. The reason for this is due to the following facts—viz., the velocity of light is about 186,000 miles per second, so that it reaches the observer practically simultaneously with its flash; but sound travels in the air at 1090.2ft. per sec. at 32° F., 1020.7ft. per sec. at 60° F., and 1142.5ft. per sec. at 80° F., the increase or decrease in the speed being at the rate of 1.09ft. for every 1° F. difference in temperature. As the average temperature in the latitude of London is about 60° F. a speed of 1,120ft. is assumed, or 373.3yds, or 341.4 metres per second.

Distances at sea may be computed from the following formula—viz., $D = 1.42\sqrt{H}$, where D = the distance of the horizon in statute miles, and H = the height of the eyes of the observer above sea-level. A man standing on the seashore will see the horizon at a distance of 3.16 miles; if 50ft. above it, his range of view will be 10 miles; at 100ft., it will be 14.2 miles; and at 200ft. the horizon will be 20 miles distant; and these distances, multiplied by 8 and divided by 5, will give the lengths in kilometres.

In order to find approximately the width of a river, stand on one bank with head erect, and hold the edge of the open palm of one hand, with fingers closed, tightly

against the forehead, then bend the palm down until the farthest edge from the eyes coincides with the opposite bank of the river; next, turn round at right angles, still keeping the palm steady against the forehead, and note where the outside edge appears to cut across a stone, shrub, or other mark, along the river bank on the same side as the observer; the distance between the observer and the object sighted will then represent the approximate width of the river.

Another method is as follows—viz., fix upon a stone or tree, &c., on the opposite bank of the river at B, Fig. 7, set up a rod at A, and another at D, both in line with the stone, or other object, at B; next set off right angles at A and D, and at C and E set up rods in line with B; then the width of the river $AB = \frac{AC \times AD}{DE - AC}$.

When setting off a right angle, it should be recollected that the sides of a right-angle triangle may bear the fixed relationship of 3, 4, and 5, to one another, or multiples of these figures; so assuming a right angle is required to be set off from A on line AB (Fig. 8), place the ring of the tape over a peg at B, say, 6ft. from A, and fasten the tape also to peg B, at 24ft. on the tape, turn the tape round peg A at 6ft. on the tape, and pull the tape taut at 14ft. on it to C. B, A, C will then be a right angle, the figures 3, 4, and 5 having been multiplied by 2.

Another method is to set off equal distances of, say, 10ft. on either side of point A, Fig. 9, such as AB and AC, place the ring of the tape over peg B, and fasten it at 50ft. on the tape to peg C, then pull it taut at 25ft. on the tape to D; the angles DAB and DAC will then be right angles. To calculate the heights of objects by the shadows cast: say the shadow of a tree or other object measures 50ft. in length (L), fix a stick, say, 3ft. (S) high, upright in the ground, and measure the length of its shadow, say this is 6ft. = l. Then the height of the tree—

$$H = \frac{L \times s}{S} = \frac{50 \times 6}{3} = 100\text{ft.}$$

The height of a cliff can be calculated by dropping (not throwing) a stone from the top, and noting the time in seconds that elapses until the sound of the stone striking the ground is heard, then the height of the cliff in feet will approximately be equal to $H = N^2 \times 16.1$, in which N is the number of seconds. The calculated height by this formula varies slightly according to the latitude and elevation of the place of observation.

To find the height of a distant object BC (Fig. 10), when the horizontal distance AB to it is known, and also the angle θ , made with the eye of the observer at A, a table of natural tangents is required; then $BC = \tan. \theta \times AB$. For instance, suppose the horizontal distance of the base of the object from the eyes of the observer is 1,260ft., and the angle θ is 6° , the natural tangent of which is = 0.105, then the height $BC = 0.105 \times 1260 = 132.3\text{ft.}$

To the Ipswich and East Suffolk Hospital on the Angelsea-road, Ipswich, there has been added a temporary new annexe for the wounded—an L-shaped ward, 97ft. in length and 74ft. across, giving a total floor-space of about 3,000 square feet, which affords accommodation for forty-seven beds. It is of timber construction, with roof of corrugated iron. The builder was Mr. C. A. Green, of Ipswich; the laundry machinery is by Messrs. Summerscales, Ltd.; and the electric plant is provided and installed by Messrs. Mann, Egerton, and Co.

"A RIPE EXAMPLE OF ARCHITECTURAL INEFFICIENCY."

In an article dealing with architectural inefficiency on January 20 last, the Canadian *Contract Record* classified the Canadian members of the profession in three types, of which efficiency was represented by the figure of 17 per cent. The article gave rise to considerable discussion. We discussed it in our issue of February 5 last. Mr. R. M. Fripp, F.S.A., of Vancouver (President of the Architectural Institute of British Columbia) also took up the cudgels on behalf of the profession. In the way of a specific instance of an "unfortunate experience," our Canadian contemporary now gives one instance, and one only, of "a man who engaged a leading architectural firm to prepare plans for a hotel building, costing, complete in all departments, not more than 500,000dol. (Before it was actually completed and ready for occupation it cost 1,250,000dol.!!) The owner had confidence in the standing of the firm, and at the outset he followed their recommendations implicitly—with the result that construction work was started before the complete plans and specifications were delivered and before bids were secured on the whole installation. The result was that he was at the mercy of these gentlemen, as the subsequent installation necessarily had to conform to the shell of the building. When the plans were submitted they were incomplete in every way. The most common details of hotel-planning were omitted, and one of many blunders consisted of duplicating plumbing and water-supply pipes for adjoining tiers of bathrooms. After endless trouble and worry the building had to be redesigned and reconstructed, resulting in extras of some 100,000dol. In this case the owner attributed his 'unfortunate experience' not so much to the wilful indifference of the architects as to their ignorance of the requirements of a modern hotel and their inability or unwillingness to learn them. Apparently the members of the firm were uninformed on some of the most elementary requirements of design and construction. As a result of his experience the hotel man is of the opinion that the average architect is wholly unfit to be entrusted with the details of a large building project:—'He is bound by precedent to such an extent that he lacks receptivity; he is not in sympathy with new ideas or new designs; and he looks with hostility on any suggestion that may be a departure from the beaten path to which he has been accustomed.'

There would appear, the *Contract Record* thinks, "to be much truth in the contention that the average architect who has been in business for a number of years and has got on fairly well in the way of accumulating money acquires an exaggerated idea of his ability and importance." This is true, it is added, in Canada. "The architectural profession in that country may be said to be in its infancy: it has yet to make its history. Albeit, some of the leading members of the profession are harder to see than a Cabinet Minister. Their time is reserved exclusively for clients. Within the sacred precincts of their office never has the foot of a supply traveller or other such inferior specimen of humanity yet trod. They imagine all sorts of highly exaggerated things about their professional status, and they attribute to themselves a combination of excellent qualities, while possessing none of them. As for what they know, they are informed in every branch of building and contracting! Expert advice with them is quite superfluous. They claim to be able to design and erect any sort of a building, regardless of its technical character, and they will actually undertake it without seeking advice from specialists. Instances where this has been done and carried to a ludicrous extent are numerous. Too often the architect is lacking in the most elementary knowledge, and it is only after the building operations are complete and expensive mistakes have been made that the owner or builder starts thinking about architectural inefficiency. 'Unfortunate experiences' with architects! How many times have we not heard of ridiculous mistakes in estimating the cost of new build-

ings? The architect is assumed to know something of prices, and the ultimate cost of building construction; but we are in agreement with the gentleman whose experience we have cited above, that 'one may take the average man of affairs and secure from him a more accurate estimate of costs than one can get from the average architect.'

"Much more," we are told, "might be said about 'unfortunate experiences'; but the other phases of the subject will provide food for later discussion, perhaps."

When it does we hope one case, which is unsupported by anything more tangible than a vague general statement, will not be offered as a text for mere general denunciation of the members of a profession which counts among its members men of at least as high standing and business ability as any "average man of affairs." Meanwhile, the methods of the Canadian architect who started work before submitting plans or getting tenders were, to say the least, so peculiar that we incline to regard the whole story as apocryphal.

St. John's new schools in Irwell street, Radcliffe, have been formally opened. Mr. H. Lord, of Manchester, was the architect, and Messrs. W. Rigby, Ltd., of Radcliffe, were the contractors.

A new branch of the Bank of Liverpool in Albert-road, Middlesbrough, has been formally opened. Mr. J. M. Bottomley, of that town, was the architect, and Mr. W. A. King was the contractor.

The St. Louis Architectural Club has elected the following officers for the ensuing year: President, Mr. Norman I. Bailey; vice-president, Mr. E. E. Christopher; secretary, Mr. H. P. Gilbert; treasurer, Mr. S. G. Stout.

The foundation-stone of the new Methodist church at Findochty, N.B., has been formally laid. The cost will be £1,100. The architect is Mr. Wm. Hendry, burgh surveyor for Buckie, and the builders are Messrs. A. Milne and Son, of Buckie.

In connection with the erection of new halls adjoining the Wesleyan church in Nicolson-square, Edinburgh, a memorial-stone was laid on Saturday. The estimated cost of the new building, which is to consist of a large and a small hall and a number of classrooms, is £6,500. The architects are Messrs. Cousin, Ormiston, and Taylor, of Edinburgh.

At Ballymena new premises to be used as a post-office and customs and excise offices have just been opened. They have been erected from plans by Mr. E. Twist, the builder being Mr. John Graham, of Dromore. Georgian in style, they are three stories in height, the ground floor being faced with Castlwellan granite, and the floors above with Lagan Vale bricks, the dressings being of Portland stone.

On the farm of Keir, Belhelvie, Aberdeenshire, an ancient grave has been discovered, containing a perfect human skeleton and three urns. One of the urns was practically whole, but the other two were broken. The grave, which was about 4ft. long by 2½ft. in width and depth, was formed of stout undressed flagstones. The find was examined by Dr. Alexander Low, Aberdeen University; but nothing was found in the urns. The remains will be exhibited at the University.

The aqueduct conducting the waters of the Owens River at Los Angeles is said to be the largest in the world. It is designed to deliver a minimum of 258,000,000 gallons of water daily into the San Fernando reservoir, twenty-five miles north-west of the city. No pumping plant is required, as the source of supply is several hundred feet above the city. The water will furnish 70,000 H.P. for electric-lighting and other purposes. The total cost of the water-works will be 25,000,000 dol., and the installation of the power plant will be approximately 5,000,000 dol. more.

The Middlesbrough Corporation sanitary committee have received a letter from the Local Government Board announcing the result of their inquiry regarding housing in the town. The letter stated that the Board had come to the conclusion that more houses were needed, and that the town council should have taken action to provide the necessary accommodation. The Board were prepared to sanction the building of 100 houses at rents from 5s. to 7s. per week. It was decided to reply to the effect that the corporation recognised the shortage of houses, and were preparing plans which had been hung up through the War.

OBITUARY.

Sir Arthur Herbert Church, K.C.V.O., F.S.A., until four years ago Professor of Chemistry at the Royal Academy, died on Monday, at Shelsley, Kew Gardens, on the day before his 81st birthday. The youngest son of a solicitor in Bedford-row, he was educated at the Royal College of Chemistry, and from 1873 to 1879 was Professor of Chemistry at the Royal Agricultural College, Cirencester. In the latter year he was appointed to a similar post at the Royal Academy, a post from which he retired in 1911, and has since been recognised as the highest authority on the chemistry of pigments. His lectures at Burlington House to the students were replete with fresh information. Among his discoveries were those of turacin, an animal pigment containing 7 per cent. of metallic copper; of churchite, a cerium phosphate; and of other previously unknown minerals. He was long engaged in efforts made for the preservation of the frescoes in the Houses of Parliament.

The death of Mr. George Reavell occurred at his home, Aydon Gardens, Alnwick, on Saturday morning, at an advanced age. Mr. Reavell went to Alnwick in 1870 as clerk of works under the late Duke of Northumberland, from the Earl of Hardwicke's estate at Wimpole Park, and was in the service of the Duke for upwards of thirty-one years, retiring into private life on the death of his grace in 1899. During his service in the estates office at Alnwick Castle, many extensive works of renovation and improvement were carried out under Mr. Reavell's superintendence at the ancestral home of the Percies. The building of the new Fosse Tower, the rebuilding of the Ravine Tower, and the construction of the subways, and the like in connection with the fixing of the steam apparatus in Alnwick Castle remain enduring memorials of his skill and ability. He also designed and superintended the building of several village schools, large additions to the National and Duke's Schools at Alnwick, the new Norman Church at Lucker, the groined roof and extensive repairs at St. Paul's Church, Alnwick, and the rearrangement of the chancel seats and oak screens in Alnwick Parish Church.

Lieutenant Laurence Kingston Adams, M.A., A.R.I.B.A., whose death in action is reported from France, was the second son of Mr. and Mrs. William Adams, of Wyndcliffe, Birkdale, Southport, and became lieutenant in the 7th King's (Liverpool Regiment) in 1913. He was educated at Elleray Park School, Wallasey; at Shrewsbury School, and at Liverpool University, where he took his degree with first-class honours in architecture, after spending some time in making measured drawings at Oxford, Paris, and Rouen, and was elected last year an Associate of the Royal Institute of British Architects. His age was 28. His brother-in-law, a captain in the same regiment, reports that he fell, shot through the heart, on gaining the parapet of the German trench at the head of his platoon, on the night of May 16-17.

Second Lieutenant C. H. Hudson, of Islington, who was killed in France on May 16, was 25 years of age, and was educated at Maidenhead and Leeds. He joined the Artists' Rifles five years ago and went out to France with the 1st Battalion in October. He passed through the School of Instruction at Bailleul and was given a commission in the 1st King's (Liverpool Regiment), being gazetted on March 1 last. His commanding officer, writing of him, said:—"He was hit when most gallantly leading his men across the open space between the two lines of trenches under a very heavy machine-gun fire from the right flank. He was the first man of his platoon over the parapet, and not a single man hesitated to follow him. He was one of our most promising officers and his death is a great loss to the regiment." He was lately in the Architectural Department of the Office of Works.

The late Mr. Lewis John Dolman, of Brisbane, Associate of the Queensland Institute

of Architects, who volunteered for the Commonwealth Expeditionary Forces, and recently died in Melbourne, was a native of Repton, Burton-on-Trent, England. After serving his articles to an architect in Burton-on-Trent, he assisted his brother, Mr. W. L. Dolman, Licentiate R.I.B.A., of Windermere, with whom he remained for six years. In 1913 Mr. Dolman went to Australia; and after assisting Mr. F. Kenneth Milne, of Adelaide, for some little time, he became an officer of the architectural staff in the Queensland Public Works Department. He was one of the first to respond to his country's call, joining the Field Ambulance of the Australian Light Horse. On leaving the Works Department, he was presented by his colleagues with a wristlet watch as a token of their regard, and of appreciation of his patriotic action. Mr. Dolman contracted pneumonia at the Broadmeadows camp, Melbourne, which resulted in his death at the early age of 29 years.

We deeply regret to learn, just as we are going to press, of the death of Mr. Charles Edward Mallows, F.R.I.B.A., and member of the Council. The deceased architect was found dead in his bed at his residence at Bedford. We have illustrated many of his works in past numbers, and have now ready for publication two of his latest—viz., the Hall and Ground Floor of a mansion at Tirley, Garth, Cheshire, which is hung in this year's Royal Academy Exhibition, and a Lodge and Post Office at Checkendon, Oxon, which we shall give shortly. We shall give further particulars next week.

The Judiciary Committee of the Florida State Senate has reported favourably upon a Bill creating a State Board of Architecture.

The Bridgewater Rural District Council have decided to offer for the appointment of highway, plans, and general surveyor at a salary of £250 a year, rising to £325, with a grant of £50 for travelling expenses.

The Dean of Guild Court at Hamilton, N.B., have approved of plans presented by Messrs. Archibald Baird and Son, Ltd., Clyde Steel Works, Hamilton, showing extensions to the works of engineering and foundry departments estimated to cost about £10,000.

The Government of India have sanctioned a detailed survey being carried out by the Baroda Durbar for a line of railway on the metre gauge between Bewasana, the terminus of their Kadi Bhojani line, and Bechrapi, the terminus of the Chanasma-Bechrapi Railway, a distance of nineteen miles.

At the Skelmersdale Urban District Council meeting it was unanimously resolved that the council make application to the Local Government Board for sanction to borrow £2,000 for extension and improvements to the council's gas-works. It was stated that the gasometer was built in 1877, and was now in a very bad condition.

The Bishop of Lincoln has reopened Washingborough and Heighington parish church on the completion of a scheme of restoration which has occupied two years and has cost £2,000. During the removal of the floor some interesting features were brought to light, including part of the original pavement, and these have been preserved. The reredos has been reconstructed and beautified by carving and painting. The west window has been filled with stained glass, the gift of the rector's family. New heating apparatus and acetylene-incandescent lighting arrangements have been carried out, and the wood- and stone-work has been strengthened and renewed.

At the Norwich Consistory Court, last week, Captain Sir Samuel Hoare appeared in support of an application for leave to erect a memorial at Sidestrant to the late Sir Samuel Hoare. It was proposed that the memorial should comprise a rood and an alteration in the existing choir-stalls. A year or two ago the late baronet put some Jacobean panelling into the chancel, and intended to have the existing choir-stalls removed, and erect new choir-stalls in harmony with the Jacobean panelling. It was now proposed to carry out Sir Samuel's wish as part of the memorial. The woodwork would be done by one of the most celebrated carvers of the day, a Belgian refugee now in England, in conjunction with Mr. Bartlett, of Westminster. The Chancellor of the diocese expressed approval of the designs.

Corrente Calamo.

It is nowadays a commonplace of conversation that many, if not most, things will be changed by the War. Nothing will be quite the same again, either in the life of the nation or in the methods of business. The great building industry, for example, must find itself in a new position. There will be land enough awaiting development, but little capital available for that purpose; while for some years incomes and earnings are likely to be lower. The economical pressure should teach us, as a people, that lesson of organisation so thoroughly learnt and laid to heart by Germany. There capital is found for commerce, industry, and agriculture by means of contribution, both national and municipal. Here we are still muddling along upon the basis of individual enterprise, and so wasting energy. The absurd and needless costliness of all legal work in regard to conveyancing and financing of builders could, and should, be cut down considerably. County and urban councils might be made to find money for building dwellings for practical builders to build with. Architects will have to learn that the cost of building is the prime point to work upon; then comes the interior planning of a house; and, thirdly, its elevation and appearance as the last, and not the first, objective. Why cannot our existing building societies be made to wake up, and become once more societies for building houses in accordance with their original intention? When this War is over—probably still some years hence—there will be something like a clean slate for future use. There must then be great opportunities for organising capital and labour, and combining the work of architects and builders, with municipal and co-operative aid—but in all things without lawyers—to produce good and cheap dwellings for every class of the people, if we are ready for such openings.

On page 603 last week, in our assessor's report on the B.N.D.C. Airmen's Club Designs, attention was directed to one of the chief purposes of all Competition Conditions—viz., "to inform competitors as to what the promoters consider they require." Much of the trouble arising in competitions is assuredly due to the fact that clients are mostly uncertain as to what they really do want. The more absolute the various clauses in the conditions are made the more unfortunate is the result as a rule, and this seems inevitable, because those who make such hard-and-fast rules almost invariably consider that they can still exercise the right of varying their interpretation, or ignoring some special provisions altogether to suit their own purposes. The majority of people actually do not know what they want till they see the way in which architects have worked out the building project for their approval. The ordinary fairly well-informed private client, who, of course, is supposed to know his own mind, differs very little from the ordinary member of a building committee in this respect. After having restricted his architect to all sorts of peculiar provisions, such a client discovers, on seeing the preliminary plans, either that the accommodation is inadequate or that certain initial notions, over which he may have cogitated for a long while, do not tumble together quite so nicely as he had expected. Or he finds he had forgotten some essential of even greater consequence. Possibly he named a figure as

his utmost limit of cost, thus handicapping his architect at the start by crippling the plan needlessly, whereas, as a matter of fact, money, after all, was not the real concern. Or the building owner, once having started his job, launches out, possibly at the instance of friends, or in pursuance of his own ideas, and increases his premises, and so incurs much extra expense, a good deal of which might have been avoided by more forethought, and then the architect is blamed for the enhanced cost, though really not responsible for it.

Government buildings, in spite of all the red tape and the highly-paid guardians of the public purse, are often flagrant instances. At the present time notwithstanding the exhaustive demands on the taxpayer, in one case near London cottages for housing have been put up on model plans at relatively high prices, which, when nearly finished, were found to be so small that in order to get even a nominal rent the front walls had to be pulled out so as to add projecting bay windows, at heavy additional cost. Criticism seems futile. In another contemporary case, after months, nay years, of discussion by various Government Departments, and when the one in question, which had to be housed in new offices, had fully stated what its needs were, no less than three or four sets of working drawings and specifications had to be prepared and then discarded before the official mind could be made up. At last the job was carried out and nearly finished, when the same responsible chief suddenly discovered that the rooms in his building ought to have accommodated fifteen clerks instead of five. Consequently the dividing partitions will have to be cut out so as to transmogrify the interior. Outrageous as it may appear to be, this not a solitary case of the kind by any means.

Competition committees suffer from the same state of uncertainty, unless the proposed building happens to be of a specialised kind, and even with these—such as schools—the fads of certain members are often the cause of much trouble and expense. The point we want to emphasise is the casual character of all promoters of building or town improvement schemes who at the same time seek to bind the assessor and competitors, and yet leave themselves free. The trouble, of course is increased when chief officials with ideas are at all risks bent upon having their own way; or when they discover later that what they thought would best suit their present requirements happens to have been improved upon by some competitor, who, notwithstanding, in other respects, may have submitted a very faulty scheme. The weight of their official influence, in spite of the conditions, is then, of course, exercised, and far better plans are ignored. The fairest method in all cases is to give all the essential information which competitors need, and then allow the competitors as much latitude as possible; while, as regards cost, the estimate should be based on an exact price per foot cube all round. Even then there will be difference of opinion as to whether the figure specified will pay for the class of finish shown on the drawings for the intended work; but of that a competent assessor will be the best judge.

The thirty-third annual exhibition of the Royal Cambrian Academy was opened on Friday in the historic mansion, Plas Mawr,

Conway, which forms the headquarters of the Academy. There are only 280 works in oil and water-colour this year, as against 305 in 1914, but the quality is well maintained. The place of honour in the Victorian Room is given to a canvas by the President, Mr. Cuthbert W. Grundy, R.I., R.W.A. The subject is "Rest"—a young girl reclining fast asleep against a sandhill; from her hand a book has fallen. Other works of note are, "In a Church at Bruges," by F. Spenlove-Spenlove; "The Shrimper," by Reginald Smith; "The Prison, Kasha, Tangier," by B. A. Pugh; and "The Top Dog," by Alfred W. Strutt, a hound standing over a slain fox. M. Huson's "Entrance to Borrowdale," seen under a rain-cloud; "Conway Castle from Deganwy," by Maud Salmon; Robert Walter's "Ludlow Castle"; Warren Williams' "Snowdon from Llyn Llydaw," and W. S. Parkyn's "Kynance Cove" are among the most attractive landscapes.

In order to ascertain from time to time if there is any movement of buildings, elevated columns, or other structures along the route as the result of subway work, permanent bench-marks are established on such structures (writes P. M. Entenmann, of the New York Public Service Commission). A good practice is to set all the marks at some even-numbered elevation, so that when checking the elevation of the points it is unnecessary to have the original record in the field, as any other than an even-numbered elevation indicates movement. A record of the elevations is kept on 8in. by 11in. sheets, which give the plan of the building, a description of the bench-mark, etc. Whenever levels are taken on a building a record is made on the sheet and the differences are noted. There is a general sheet for each building. A sheet of similar form is used for elevated-railway columns. In addition to fixing the elevation of some permanent mark on buildings and elevated-railway columns, these structures are plumbed so that the movements due to construction can be detected. An auxiliary base-line is run close to the buildings, and sights are taken with a transit to points on the top and bottom of the structure. In the case of buildings, marks are cut on the wall as near the roof and as near the sidewalk as possible, and sometimes at intermediate points, and a record made of the reading from these points to the auxiliary base-line. Movement of the building as a whole, as well as any change in inclination, can then be detected. In the case of elevated-railway columns, marks are cut at the top and bottom, and readings are taken to the auxiliary base-line, and also to a line at right angles to this line at each column, so that movement in any direction can be observed. These records are kept on 8in. by 11in. sheets similar to the ones for settlement levels. Prior to beginning construction work, an examination is made of each building which might be affected by the work. A report is made of the condition of each room of the building, describing all the defects in the walls, ceilings, and all ordinary conditions which might later be attributed to subway work, and in addition a similar record is made of the condition of the exterior, the cellar, and the roof.

An American official in China writes: The ugliness of the American West is a symptom of disease of the soul. It implies that the end has been lost sight of in the means. In

China the opposite is the case. The end is clear, though the means be inadequate. Consider what the Chinese have done to Tai Shan, and what the West will shortly do once the stream of Western tourists begins to flow strongly. Where the Chinese have constructed a winding stairway of stone, beautiful from all points of view, Europeans or Americans will run up a funicular railway, a staring scar that will never heal. Where the Chinese have built a series of temples, each so designed and placed to be a new beauty in the landscape, they will run up restaurants and hotels like so many scabs on the face of Nature. I say with confidence that they *will*, because they *have* done it wherever there is a chance of a paying investment. Well, the Chinese need, I agree, our science, our organisation, our medicine. But it is affectation to think that they may have to pay too high a price for it, and to suggest that in acquiring our material advantages they may lose what we have gone near to lose, that fine and sensitive culture which is one of the forms of spiritual life? The West talks of civilising China. Would that China could civilise the West!

It is to be hoped that the death of Lord Jersey will cause no change at Osterley Park, his late lordship's Middlesex seat, which, like Caen Wood in the North, and Holland Park in the West, has still preserved its rural character. Some thousands of our present and past readers who have taken their practical examination tests there for the examinations of the Surveyors' Institution will retain pleasant remembrances of the place, which has many other traditions of hospitality. The famous library, which boasted no fewer than ten Caxtons, was disposed of by Lord Jersey by auction in 1885, when, if our memory serves us, it realised over £13,000.

All congratulations to the greatest living novelist, Mr. Thomas Hardy, who on Wednesday last celebrated the seventy-fifth anniversary of his birth, and who, we are glad to learn, is in good health and spirits. It is just fifty-nine years since he was articulated as an architect. He worked with Sir Arthur Blomfield from 1862 to 1867, was a prizeman of the R.I.B.A. in 1863, and of the Architectural Association the same year. His first novel, "A Short Story," was published in 1865, and the long list since has included many that have lifted his name to a niche in English literature that will beyond all doubt outlast the fame of most of his contemporaries. Architecture still ranks among his "recreations."

At Branston, Mr. A. W. Brightmore held on Tuesday a Local Government Board inquiry into an application by the rural district council for sanction to borrow £3,800 for works of sewerage and sewage-disposal.

The Secretary of State for India has appointed Mr. C. C. T. Eastgate to be Electrical Inspector to the Government of the Punjab, Lahore, at a salary of Rs.800 a month, on an agreement of three years, in the first instance. Mr. Eastgate was formerly employed in the firm of Messrs. Octavius Steel and Co., of Calcutta.

The Roman Catholic Archbishop of Tuam laid the other day the foundation-stone of the new parish church of St. Patrick for the town of Newport, Co. Mayo, towards the building of which the late Mr. Martin Carey left a bequest of over £10,000. The church, which will be Irish Romanesque in style, will provide sittings for 1,150 persons. The architect is Mr. R. M. Butler, of Dublin.

PROFESSIONAL AND TRADE SOCIETIES.

ENGINEERING PROBLEMS IN MESOPOTAMIA.—Sir John Jackson, head of the firm of civil engineers which completed the Hindia barrage across the Euphrates some eighteen months ago, lectured at the Royal Institution on "Engineering Problems of Mesopotamia and the Euphrates Valley" on Friday night. He pointed out that one of the first problems to be dealt with would be the removal of the great sand bar at the entrance to the Shat-el-Arab, which obstructs the navigation of vessels even of moderate size. Referring to the construction by the Germans of the Ottoman Bagdad Railway to link the Anatolian Railway at Konia with Bagdad and the Persian Gulf, the lecturer observed that once we had peace and the Germans out of control of Turkey, this railway should be completed across the Taurus Mountains on to Bagdad, and thence to Basra at any rate, if not further on to Koweit. With the railway completed and a direct line of only some 50 miles in length from Bagdad, through Damascus, to Beirut, huge trade would be opened for the whole of this Mesopotamia district and through Basra to the Persian Gulf and the East. There could be little doubt that any money expended on irrigation works would be amply repaid, as in the case of the great works of the Nile Valley and the Chenat Valley of India.

EXCAVATIONS AT RICKMANSWORTH.—Mr. Reginald A. Smith and Mr. Henry Dewey described to the Society of Antiquaries at their last meeting the excavations made at Rickmansworth in 1914 on behalf of the British Museum. Sir Arthur Evans occupied the chair. The frequent occurrence of palæoliths at that place had suggested the examination of two pits in that neighbourhood. Four days' work at Mill End yielded nothing of interest, but five days at Long Valley Wood, Croxley Green, on the 200ft. contour, sufficed to verify the existence of palæolithic flints just above the chalk shelf under about 20ft. of gravel. The site is at the surface about 60ft. above the River Gade, near its junction with the Colne, and lies on the edge of a plateau covered with plateau gravel, evidently later than the St. Acheul period. The excavators were doubtful whether this was a gravel capping of the Chilterns, or whether it had been laid down by a predecessor of the River Colne. There were difficulties in the way of either interpretation.

NEW SOUTH WALES INSTITUTE OF ARCHITECTS.—The exhibition of the Institute of Architects of N.S.W. will be held in October, 1915, at the town-hall, Sydney, and will take the form of an Ideal Home Exhibition. A feature of the exhibition will be a competition of a model cottage, open to the architectural profession only throughout the Commonwealth. The model to represent a cottage valued at not more than £2,000, and to be constructed of any material, coloured, etc., to represent the actual building. All models, which will be exhibited, must not exceed an area of 18sq.ft., part of which will represent the lay-out of the grounds. The prize for the best model will be £25. The adjudication for this competition will be carried out strictly under the rules and regulations for competitive designs drawn up by the Institute of Architects of N.S.W. There will also be an exhibition of work. Any architect or draughtsman may submit exhibits. No work can be accepted which has hitherto been hung at any exhibition in Sydney. An entrance-fee of 10s. 6d. for "model cottages" exhibited, and 2s. 6d. for plans and specifications, will be charged. All fees to be paid to the Secretary of the Institute on or before October 21, 1915. The exhibits will include designs for public buildings, business premises, and warehouses; domestic work, ecclesiastical work, drawings, showing details of construction; architectural sketches, and students' work. All communications should be addressed to the Organising Secretaries, Institute of Architects of N.S.W., 5, Elizabeth-street, Sydney.

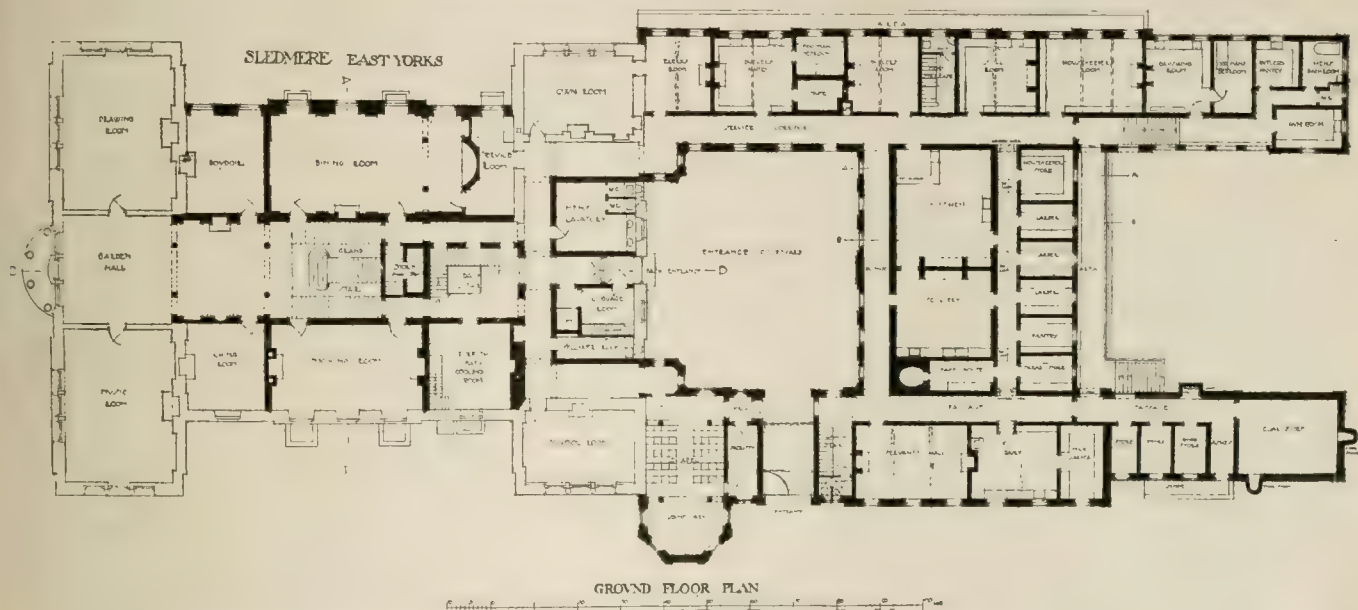
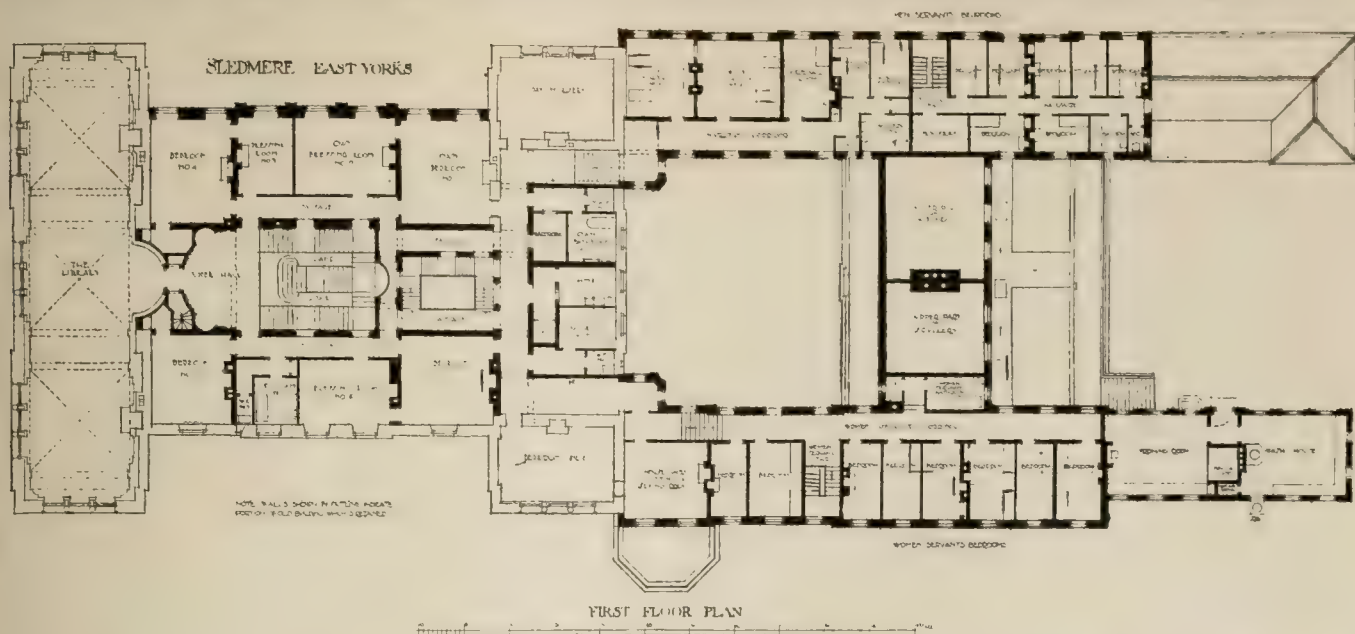
POSTPONEMENT OF R.I.B.A. PRIZES AND STUDENTSHIPS, 1916.—On the recommendation of the Board of Architectural Education, the Council have decided that, owing to the existing conditions, the competitions for the prizes and studentships postponed from last year shall be further postponed until next year, with the exception of the Ashpitel Prize.

ROYAL VICTORIAN INSTITUTE OF ARCHITECTS.—At the annual meeting of this Institute, held in Melbourne, the following officers were unanimously elected:—President, Mr. H. W. Tompkins; vice-presidents, Messrs. E. A. Bates and W. A. M. Blackett; hon. treasurer, Mr. W. M. Campbell; hon. secretary, Mr. John Little; hon. assistant secretary, Mr. W. M. Campbell; council, Messrs. W. S. P. Godfrey, Anketell Henderson, Percy Oakden, James S. Watts, and Sydney H. Wilson; Associate Member, Mr. Alec. S. Eggleston.

SOUTH AFRICAN BRANCH OF THE SOCIETY OF ARCHITECTS.—On account of the activities of the society's branch at Johannesburg being restricted during the War, and there being less need of funds for general purposes, it has been decided to vote the money usually expended on social functions and visits to works for the relief of distress. The branch has voted a contribution of £25 to the Governor-General's funds for the relief of distress caused by the War, and has also sent a sum of ten guineas to the funds of the Professional Employment Committee of the Architects' War Committee. The council of the branch also report that the South African School of Mines and Technology has accepted the offer of the South African Branch of the Society of Architects to give prizes of a total value of ten guineas to members of the architectural classes at the school in the subjects of architectural history and studio class work.

THE SURVEYORS' INSTITUTION.—For the first time in the history of the institution the council have to report a reduction in the number of members, the total in May, 1915, being 5,385, compared with 5,482 twelve months ago, due to a diminution of 107 in the number of professional Associates, and 35 in the number of Students. Doubtless the War has had some effect in contributing to this result; but it was anticipated in the council report of last year, when it was pointed out that the exceptional increase in numbers which had taken place during the previous two years was caused by the desire of intending professional Associates to enter prior to the closing of the doors to those who had not passed the final as well as the intermediate examination. The supply has now been shut off, and will not again become normal until a considerable accumulation of men who have passed the intermediate exists, from which the final examination and the balloting list may be recruited. The receipts for the year 1914 reflect the reduction in the membership, and a similar result is noticeable in connection with the entrance fees received on capital account, the amount under this head being £170 in respect of 54 elected candidates in 1914, compared with £1,560 for 495 in the previous year. There is also a heavy and natural decrease in the receipts on the examination account due to so many of those who would in normal times have presented themselves as candidates having joined the national forces. The total received under this head was £2,051, compared with £4,034 in 1913. The report was adopted at the annual meeting of the Institution held on Monday afternoon, when Mr. Howard Chatfield Clarke, the retiring President, occupied the chair. Mr. John Henry Hanson, principal, since 1880, of the firm of Messrs. Abbey and Hanson, of Huddersfield, and borough surveyor of Barnsley from 1878 until 1880, was elected President for the ensuing year.

The new fire-station for Upper Renfrew at Darnley has been opened. Mr. Robert Ewan, senior, was the architect, and the cost was £5,500.



SLEDMERE, YORKSHIRE, THE RESIDENCE OF COL. SIR MARK SYKES, BART., M.P.
Mr. W. H. BRIERLEY, F.S.A., Architect.

Our Illustrations.

SLEDMERE, YORKSHIRE.

The old hall was built between the years 1783 and 1791, for Sir Christopher Sykes, Bart., from designs by J. Rose, an assistant of the Brothers Adam, to replace a smaller house, probably of the Queen Anne period. This 18th-century house was destroyed by fire in May, 1812, only the principal walls being left standing. The building is now being restored for Colonel Sir Mark Sykes, Bart., M.P., and new servants' and kitchen wings have been added at the north end of the building to replace the old kitchen offices, which were inadequate and out of date. The central portion of the south-west wall of the hall, shown by the illustration, owing to damage by fire, was in an insecure state, and had to be rebuilt, and a decorative feature of pilasters with a pediment has been added to relieve the severity of the old design. The whole of the finishings in the main building will, as far as possible, be reproductions of the old ones thus destroyed by the fire. Records of these survive in Rose's original drawings for the work, which have fortunately been preserved. The designs of the decorative plaster ceilings, of which the old building contained some fine examples, have been reconstructed from the old drawings, photographs, and fragments of ornament

which were collected after the fire and carefully preserved. This work is now being carried out, under the direct supervision of the architect, by Messrs. Martyn and Co., of Cheltenham. The architect is Mr. Walter H. Brierley, F.S.A., of York, and the contractors for the works now being executed are Messrs. Walker and Slater, of Derby. The double-page plate here given was photographed from the original water-colour at present on view at the Royal Academy Exhibition.

NEW COTTAGES AND DAIRY FARM, EWELL MANOR, NEAR MAIDSTONE.

These cottages and pleasure dairy-farm for 12 cows were designed for Mr. V. Biscoe Tritton, of Ewell Manor, near Maidstone. The work was about to be erected when the War broke out, and its execution has in consequence been postponed. There is provision for two workmen's cottages, a foreman's cottage, a working dairy, cow-house for 12 cows, bull-house, piggery, stable, etc. The site was in a meadow sloping to the N.E., and the arrangement of the buildings was dictated not only by the desirable aspects for the various departments and ease in working; but by the slope of the ground and the site selected for the farmstead. The materials intended are to be unpicked red bricks, and old plain tiles from some old hoppers' sheds pulled down on the site, for the cottages and central barn, while pantiling is proposed for

the farm buildings. The architects are Messrs. Geoffry Lucas and Arthur Lodge, of 13, Gray's Inn-square, W.C., and the drawing, by Mr. Lodge, is hung in the present Royal Academy Exhibition.

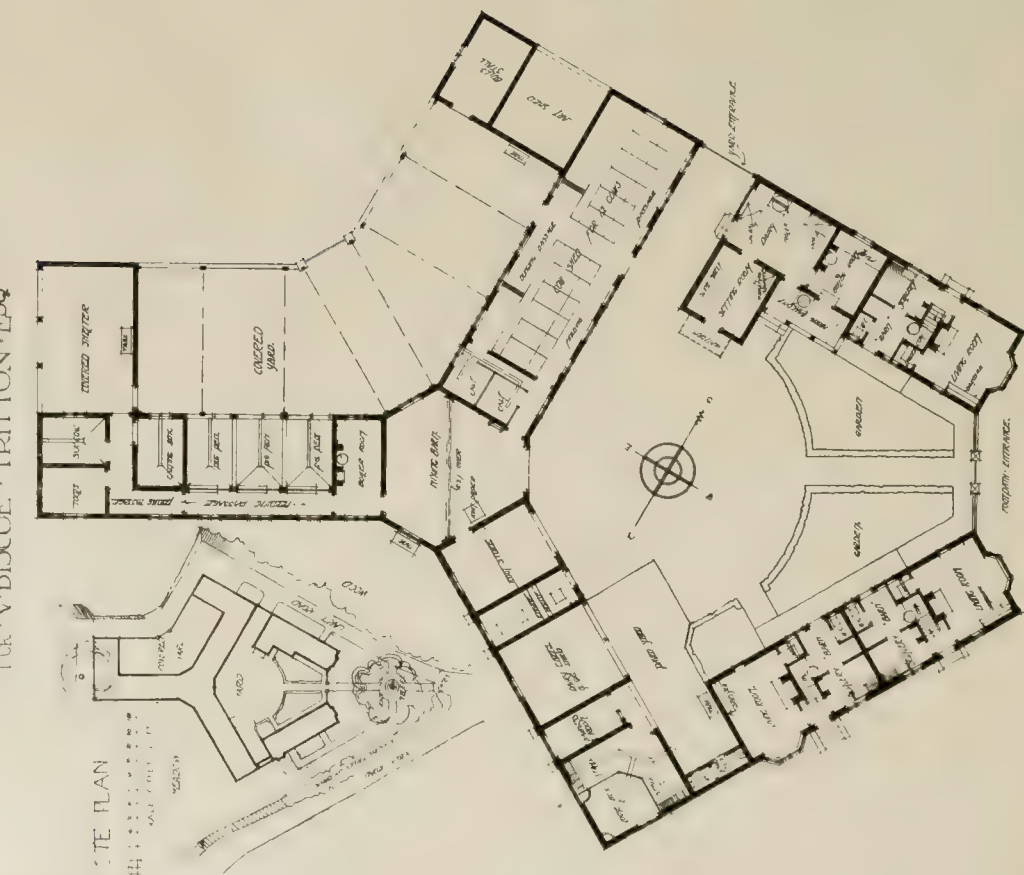
MESSRS. BARCLAY'S BANK AT LUTON.

The drawing here reproduced is at present well hung at the Royal Academy Exhibition, and it illustrates a new bank for Messrs. Barclay to be erected on the same site as their present premises, but including also the adjoining shop. The materials will be 2-inch multicoloured bricks and Portland stone for the cornice and entrance doors, the roofs being covered with antique red tiles. The ground-floor and basement will be used for banking purposes, accommodation for a resident clerk or manager being provided on the first floor. Access is to be arranged from this level down to the garden at the back of the premises. Mr. Arthur Blomfield, M.A., F.R.I.B.A., is the architect.

ST. GILES' STREET FRONT OF THE PUSEY HOUSE, OXFORD.

This elevation is now on view at the Royal Academy Exhibition. A plan of the building, as then proposed, will be found in the BUILDING NEWS for August 2, 1912, with a general perspective and sketch of the north-east corner of the quad, from originals shown at the Royal Academy. In our issue for May 20,

WELL MANOR, NEAR NIADSTONE,
NEW COTTAGES & DAIRY, EARN.
FOR V. BISCOE, TRITTON, ESQ.



FIRST FLOOR PLAN.

GROUND FLOOR PLAN.

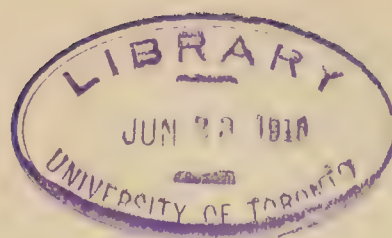
1913, a double page was devoted to the interior of the chapel, likewise hung at the Academy. The frontage in St. Giles' street is 154ft. long, and the north side skirts Alfred-street. Messrs. Benfield and Loxley, of Oxford, the contractors, carried out this work. Mr. Temple Moore, F.R.I.B.A., of Hampstead and Bedford-row, is the architect. Further buildings are in course of erection, and when completed will form a quadrangle, on the north side of which is the chapel, and on the west the library, museum, and lecture-rooms. The east side along St. Giles' street

contains the common-rooms, dining-rooms, and sacristies. The chapel was completed last year and the library was finished recently. The northern end of the façade here shown is nearing completion, and the other half will follow on.

EASTBURY MANOR HOUSE, BARKING, ESSEX: THE GREAT STACK IN COURTYARD.

Plans of this well-known historic house were given with the general elevations and longitudinal section which appeared in our

issue for April 30 last, accompanied by some particulars of the building. It is said to have been erected in the days of Queen Elizabeth, and stands about a mile to the East of Barking, some distance back from the Old Tilbury-road. To-day we have reproduced two sheets of measured details arranged on a double-page illustration in further representation of the main façade, and also showing "the great stack" next the octagonal staircase turret adjoining the parlour wing. Mr. Hubert V. C. Curtis is the author of these carefully depicted Geometrical Studies.



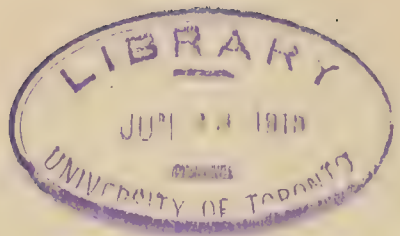


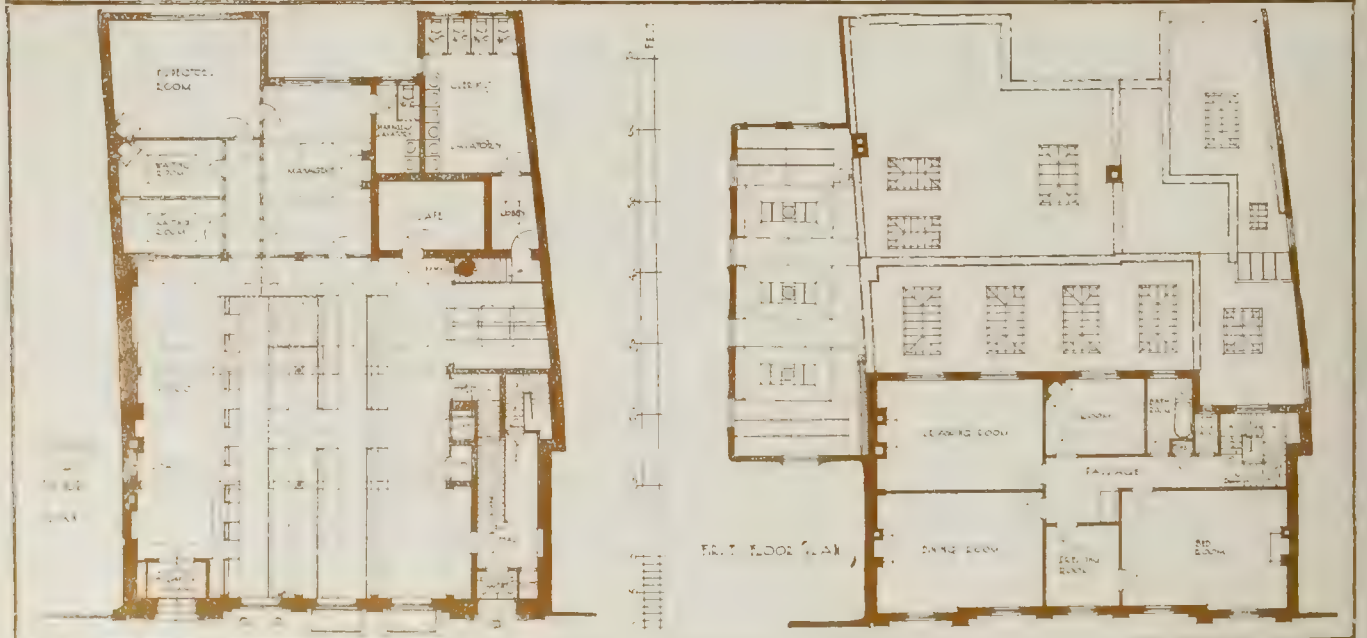
SLEDMERE, YORKSHIRE, THE RESIDENCE OF COLONEL SIR MA
Mr. WALTER H. BRIEF

JUNE 4, 1915.



YKES, BART., M.P.: SOUTH-WEST FRONT AS NOW REBUILT.
S., F.R.I.B.A., Architect.



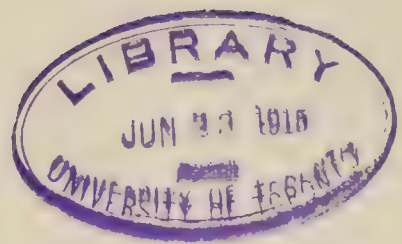


Messrs. BARCLAY'S BANK AT LUTON, BEDFORDSHIRE.
Mr. ARTHUR BLOMFIELD, M.A., F.R.I.B.A., Architect.



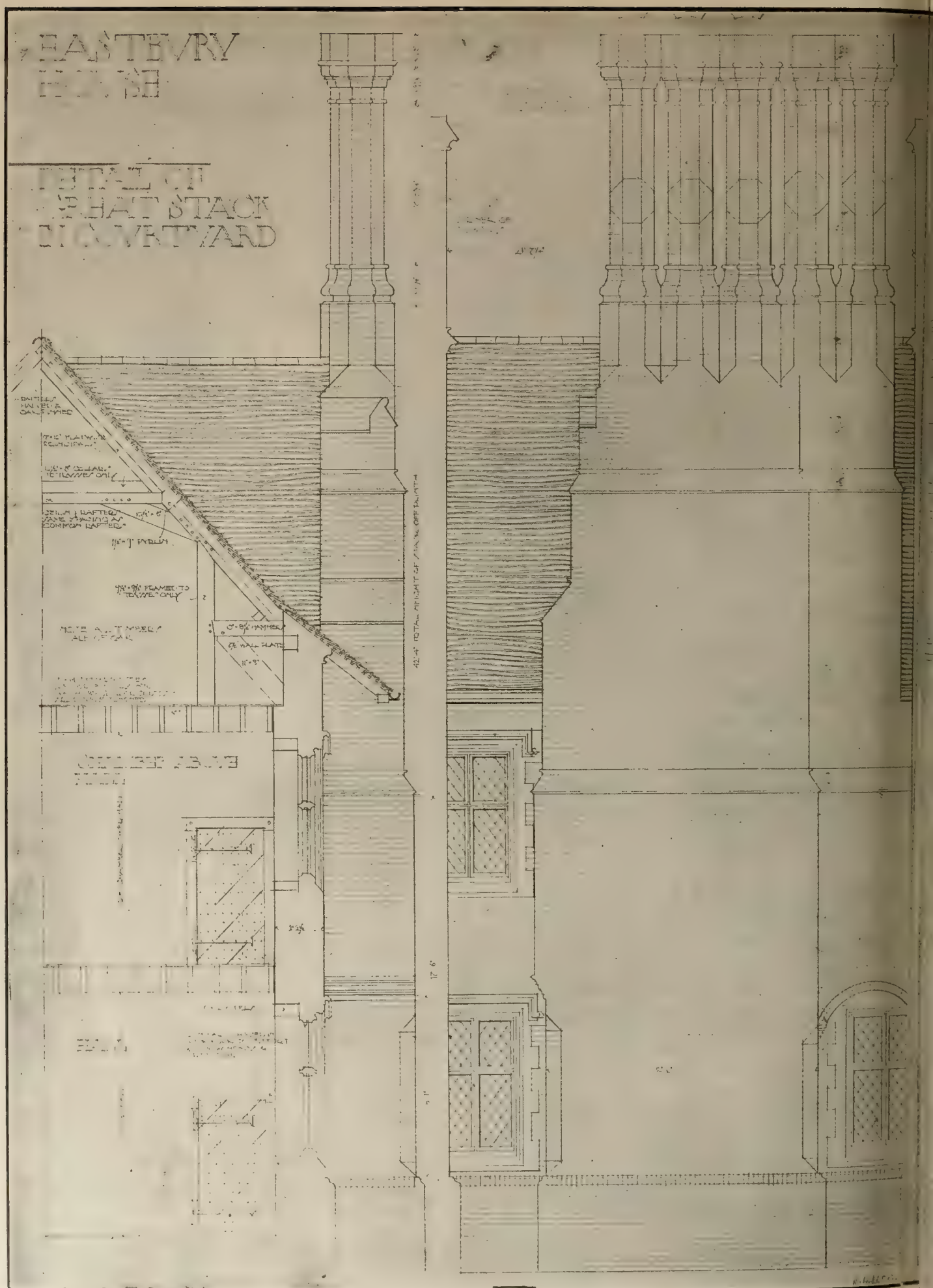
NEW COTTAGES AND DAIRY FARM, EWELL MANOR, NEAR MAIDSTONE.
Messrs. GEOFFRY LUCAS and ARTHUR LODGE, Architects.

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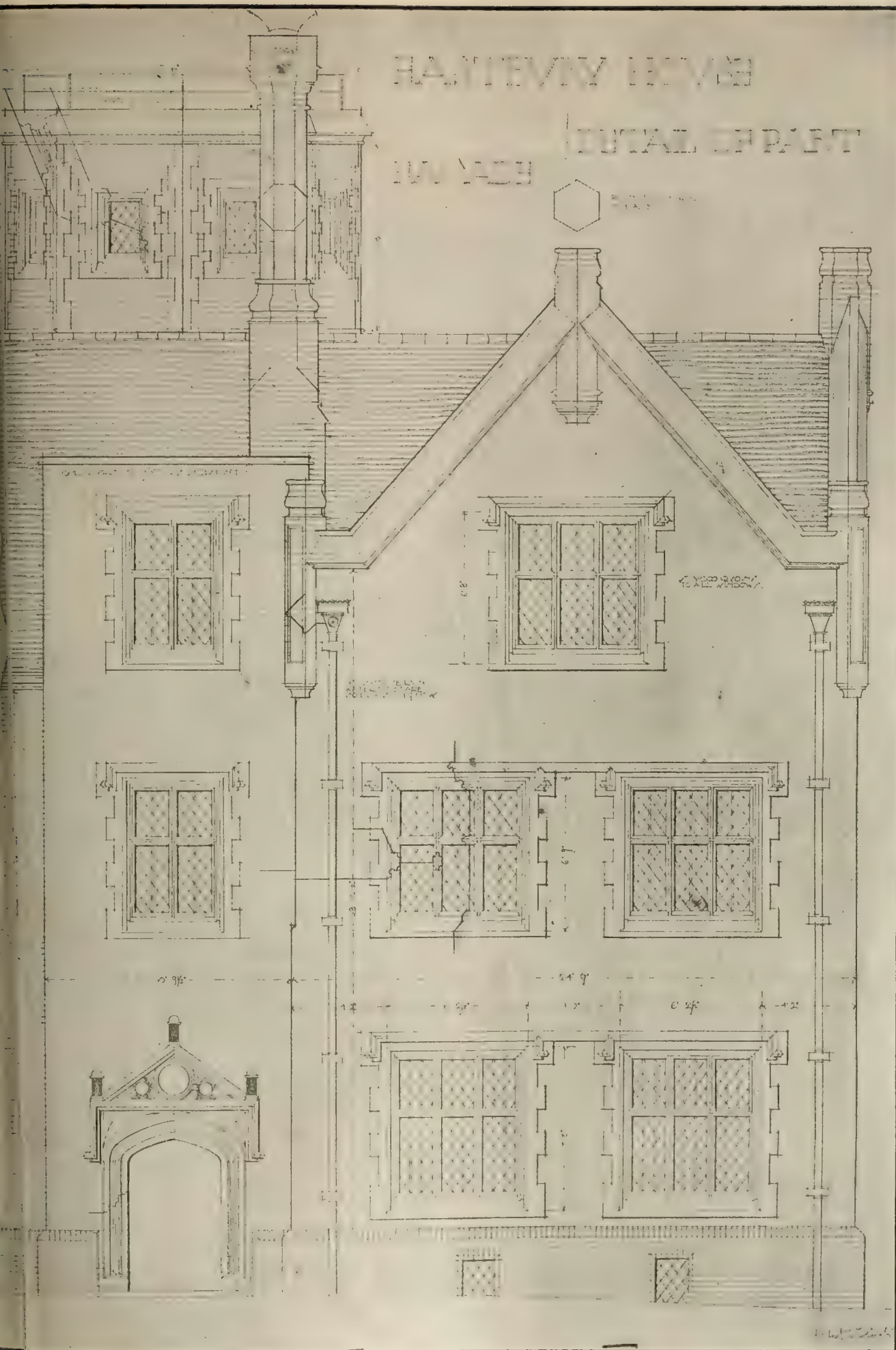


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EASTBURY MANOR HOUSE, BARKING, ESSEX. THE GREAT STACK I



Building Intelligence.

CHURCH-BUILDING GRANTS.—At the annual meeting of the Incorporated Church-Building Society the following grants in aid were voted: Building new churches at Gillingham, St. Augustine, Kent, £175, and Scotswood, St. Margaret, near Newcastle-on-Tyne, £80; and towards enlarging or otherwise improving the accommodation in the churches at Hultoft, St. Margaret, Lines, £35; Lambeth, Holy Trinity, Surrey, £50; and Lanberis, St. Padarn, Carnarvonshire, £85. Grants were also made from a special fund towards building mission churches at Coventry, St. Margaret, £20; Temple Fortune, St. Barnabas, Hendon, Middlesex, £40. The following grants were also paid for works completed: Haggerston, St. Augustine, Middlesex, £20; Sudden, St. Aidan, Rochdale, £175; Harlton, St. Mary-the-Virgin, Cambridge, £10; Longfleet, St. Mary, Dorset, £80; and Squirrel's Heath, All Saints, Romford, £35. In addition to this the sum of £70 was paid towards the repairs of ten churches from trust funds held by the society.

CORK.—The Roman Catholic Bishop of Cork laid the other day the foundation-stone of the new collegiate church of St. Finbarr, which is an adjunct of the Honan Hostel. This church is the gift of the late Miss Isabella Honan. The style of the building is the Hiberno-Romanesque architecture which prevailed in the 12th century; the fabric will exhibit many points of resemblance with the earlier stone-roof churches of the Irish, as in its simple division into nave, chancel, and sacristy, and in other respects. The nave measures 72ft. in length, by 28ft. in width; and the chancel, 26ft. in length, by 18ft. in width. The over-all length of the building is 106ft., and the interior height from floor to barrel-vaulted ceiling about 33ft. The height to the top of the cross on gables is 55ft., and the height to eaves, externally, 28ft. The building is being erected from the designs and under the superintendence of the architect, Mr. James F. McMullen, K.C.S.G., M.R.I.A.I., Cork.

EDINBURGH.—The old premises of the Young Men's Christian Association in South St. Andrew-street have been demolished, and on the site is to be erected a seven-story building, including basement, from plans prepared by Mr. G. Washington Browne, R.S.A., of Randolph-cliff, Edinburgh. The building has a narrow frontage, and will be treated in Classical fashion. The provision will include a hostel, a gymnasium, and a billiard-room, special features that have not hitherto found a place in the work and interests of the association. The basement floor, which will have a separate entrance from Meuse-lane, will provide a drill and recreation hall, a reading-room, and a handicrafts-room. The ground floor will be occupied by a reception-hall, 53ft. by 35ft., and lounge. The pillared hall will have an alcove which will be utilised as a reading-room. To the left of the main entrance will be the secretary's room, and to the right the main staircase leading to the upper floors, which will also be connected by an automatic elevator for the use of the members. The first floor up consists mainly of a hall, 52ft. by 36ft., for meetings, lectures, and concerts, which will have sitting accommodation for 350 people. There will be a platform at one end and a gallery at the other. En suite with the lecture-hall will be the platform-room, the board-room, the cloakrooms, and retiring-rooms, while on the gallery floor level will be a smaller hall. The main hall will extend through two floors of the front building. On the second floor the front of the building will be devoted to the libraries, and the back portion to a billiard-room, with three tables. A feature of the third floor will be the gymnasium, 53ft. by 29ft., and connected with it will be dressing-rooms, baths, an instructor's-room, and a physical examination-room. The top two stories will be used for the purposes of the hostel accommodation. The construction throughout will be

fireproof, and will have a special heating and ventilating system, and the premises will be fitted with electric light. On the frontage to St. Andrew-street the two lower floors will be treated as a rusticated basement to support the upper part of the building, which is to be divided into three main bays between fluted Ionic columns, and the whole will be crowned by main cornice and superimposed balustrade. From the street to the top of the stonework the height of the building will be 68ft., and above this, and rising to an additional height of 18ft., will be the timbered and slated treatment of the two upper stories. A drawing of the building finds a place on the walls of the present Royal Scottish Academy Exhibition in the Architectural room.

The Local Government Board have sanctioned a large loan to the Woolwich Borough Council for electricity purposes.

The proposal of the borough council of Battersea to extend a supply of electricity to the Nine Elms district, at an estimated cost of £15,750, is not opposed by the Treasury.

Major T. Hunter, V.D., borough engineer of Leigh, Lancs, has rejoined his old battalion, the 5th Manchester Territorials, and has been appointed to command the administrative centre of the regiment. The corporation have granted Major Hunter leave of absence.

At the meeting of the Evesham Joint Hospital Board held on Monday evening last the clerk said he had received the sanction of the Local Government Board to a loan of £1,000 for extensions and alterations to the administrative block. He had made arrangements to borrow the money at 4 per cent. It was decided to proceed with the work at once.

News of the death of Mr. Mark Howarth, a well-known Sunderland builder and contractor, has reached the Wearside town. Mr. Howarth, who was in his sixty-seventh year, had spent the last three years in retirement at Croft Spa. He was a native of Sunderland, and many buildings, both for manufacturing and residential purposes, were erected by him.

News has been received in Warrington of the death of Lieutenant Althorp Ridgway, youngest son of Mr. T. J. Ridgway, Registrar of Warrington County-court, residing at Lymn, Cheshire. Lieutenant Ridgway, who was only twenty-five, was an officer in the Australian contingent, and was wounded in the recent land fighting in the Dardanelles. He was a Government Engineer for Lighthouses, and previously held an appointment under the Mersey Docks and Harbour Board at Liverpool.

The death took place on Monday, at the advanced age of ninety-one, of Mr. George Evans, of Severn Bank, Shrewsbury, a past mayor of the borough, and for a considerable period an alderman. Mr. George Evans was for many years in business at Shrewsbury as the leading sanitary engineer, and during his membership of the town council he was chairman of the sanitary committee. He retired from business some years ago, and for the past ten years or so he had taken little or no part in public life.

Our contemporary "Indian Engineering" states that "Mr. R. Jackson has been brought out from home and appointed as Assistant Architect, Madras. Mr. Jackson has been engaged on a three-years' agreement, to begin with, on a salary of Rs.450 a month. Mr. Jackson received his earlier training as an architect under Messrs. A. B. and W. Scott Deakin, F.F.R.I.B.A., Shrewsbury. He was then employed for some time with Messrs. Buckland and Farmer, Birmingham, and with Mr. W. T. Parker, 97, Jermyn-street, London. Immediately prior to his present appointment Mr. Jackson was with Mr. Henry Tanner, F.R.I.B.A., 12, Regent-street."

A conference has been held at the council chamber, Corporation Buildings, Dunfermline, between the town-planning committee of the town council and representatives of the Admiralty, the Local Government Board for Scotland, and the Scottish National Housing Company, Ltd., for the purpose of discussing the question of the provision of dwelling-house accommodation at Rosyth. The conference, which lasted slightly over two hours, was private, and at the close it was stated that an arrangement satisfactory from the point of view of Dunfermline Town Council had been arrived at, and that an early beginning would be made with the provision of dwelling-house accommodation for the Rosyth workers.

COMPETITIONS.

BROMBOROUGH PORT.—In the cottage competition, at Bromborough Port estate, for Messrs. Lever Brothers, Ltd., the assessor, Mr. Geoffrey Lucas, has made his awards, and the winners are as follows: Five cottages: Messrs. Gustave Agate and Halliday and Paterson, Manchester; Messrs. Cleland and Hayward, Wolverhampton; Mr. W. Fullerton, Woodford; Mr. Frank H. Bromhead, Knebworth. Seven cottages: Messrs. Cleland and Hayward, Wolverhampton; Messrs. Gustave Agate and Halliday and Paterson, Manchester; Mr. E. G. Theakston, London. Three cottages and shops: Messrs. Morter and Dobie, Liverpool. Seven cottages and shop: Mr. E. G. Theakston, London. Five cottages and shop: no award. The drawings will be on view at the Auditorium, Port Sunlight, between the hours of 10 a.m. and 4 p.m. on Tuesday and Wednesday, June 8 and 9.

CLEVELAND, OHIO.—The Public Library Board of Cleveland are about to build a library on a site near the U.S. Post Office and the Custom House, at an estimated cost of 2,000,000dol. They decided to invite two architects practising in Cleveland and five in other parts of the United States to send in competitive designs; but as a result of a protest raised by the local chapter of the American Institute of Architects and the Cleveland Builders' Exchange they have agreed to invite three instead of two local architects. The eight selected architects will be chosen on the basis of their architectural records, and will each be paid an honorarium of 1,000dol.

LUTON, BEDS.—The date for sending in designs in the limited competition for the new secondary school to be erected by the Bedford County Council at Luton has been again postponed owing to the War. As local urban council authorities and educational boards are not allowed to borrow money for public buildings of this kind, much needed work is at a standstill.

The repairs to All Saints' Church, Scarborough, rendered necessary by the German bombardment have cost £900. The church was reopened on Friday evening, the Bishop of Hull being the preacher.

Mr. William Lovell Mason, of Ambleside, Lake Windermere, architect and land agent, was proceeding into Ambleside on his motor-cycle on Friday afternoon, when he came into collision with a provision float. His neck was dislocated by the fall, and he was killed instantly. Mr. Mason was fifty years of age. His two sons are lieutenants in the Army.

So many men from the mining town of Shirebrook, Derbyshire, have joined the Army—the number is put at about 1,500—that the Blackwell Rural Council consider that it is not necessary to proceed with their scheme of providing 100 dwellings for the working-classes there, and for which the sanction of the Local Government Board had been obtained.

Lieutenant Maurice Day, of the 2nd Berkshires, late of the Artists' Rifles Corps, is posted "Missing, believed killed," in the action before Ypres. Lieutenant Day was one of the three sons of the Rev. B. W. Day, rector of St. Peter's, Sandwich, all of whom have volunteered for active service. He had been a member of the Architectural Association since 1910.

Mr. F. S. Habel, who has during the past four and a half years acted as manager for the contractors, Messrs. W. Hill and Co., on the new harbour works at Whitby, has just left to take up an important appointment with Messrs. Topham, Jones, and Railton, who are shortly to carry out the large dock extensions at Tilbury for the Port of London Authority.

At the meeting of the Northamptonshire Education Committee on Saturday a report was presented showing that Mr. Adam F. Watson, F.R.I.B.A., of Sheffield, the consulting architect, had written offering to agree to a suspension of his salary until the end of the war, as, owing to the fact that the Local Government Board was preventing local bodies from borrowing money, his services were not likely to be required. The committee accepted the offer, and an expression of thanks was added. Mr. Watson is the president of the Sheffield Society of Architects and Surveyors, and a member of the Royal Institute Council.

Correspondence.

NAIROBI CATHEDRAL.

To the Editor of the BUILDING NEWS.

SIR,—I am sorry to say I made a mistake in the particulars I gave you of the above scheme in the name of the supervising architects. It was Messrs. H. O. Ellis and Partners, of London and Nairobi, whom the committee eventually appointed as local architects to carry out the work, and not Messrs. Tate, Smith, and Henderson. I would be greatly obliged if you would kindly correct this.—I am, etc.,

TEMPLE MOORE.

44, Bedford-row, London, W.C.,
May 27, 1915.

SAXON CRYPT, REPTON, DERBY-SHIRE.

SIR,—Having made just lately a motor trip of some ninety miles (there and back) to see this crypt, I entertain little doubt about the interest attached to such a charming example. In its way it is, in fact, unique. Many other architects, therefore, perhaps, would like to know more about it. References to this crypt occur in all the chief authorities' volumes on English Mediæval architecture; but although the work is described more or less fully, varied repeats occur of what has already been said elsewhere, whereas no illustrations have been given, so far as I know, in either of the best architectural textbooks. Though small, it has a very delightful plan, with four detached spiral-faced stone monolithic shafts of uncommon height for Saxon masonry. I have not found any good drawing of this crypt, but am told an interior view appears in Lyson's "Derbyshire." Such treatises, however, are not available to the majority of your readers. Besides, architects do not really value popular pictorial sketches. I have obtained a photograph of the crypt in question; but this underground chapel is much too small to allow of the camera taking in the four columns and responds together, and cannot show the suggested cruciform shape of the building. I have failed to ascertain the name of the guilty individual who was responsible for the denuding of the chancel of Repton Church by making such a clean sweep of all its Saxon remains, which for centuries gave it such distinction as a most valuable evidence of the history of St. Wystan's sanctuary. The horrid Staffordshire tiling put down by this person, whoever he was, furnishes only another example of his incapacity, lack of artistic sense, and the depths of which Victorian vandalism was capable. Certainly, whoever he happened to be, his damage was completed once and for ever.

Dr. Bigsby, an authority who has been quoted, left it on record that many fine specimens of wood-carving at various times were also carted away from Repton Church, while, to use his particular word, several monuments of importance were "with-drawn." Fuller refers to the sacrilegious and mercenary Thacker (possibly Gilbert Thacker, who died 1563), who, being possessed of Repingdon (Rapendum) Abbey, called together carpenters and masons "to pluck down in one day a most beautiful church belonging therunto," saying "he would destroy the nest for fear the birds should build therein again." His violent conduct, it seems, was due to the report that Mary Tudor intended to set up the Abbeys again.

The crypt at Repton is described as being a portion of the conventual church demolished by the Danes A.D. 874. It is certainly more Roman than Norman in character. My purpose in writing is to inquire if any reader of the BUILDING NEWS can lend you a suitable measured drawing with view to its illustration, giving a plan to scale and sections. Perhaps Mr. J. R. Naylor, of Derby—who has, I believe, done work at Repton School—may know of such a set of details?—I am, etc.,

ASINUS AD LYRAM.

WATER SUPPLY AND SANITARY MATTERS.

GRAVESEND.—At the last meeting of the Gravesend Town Council it was resolved that, irrespective of the actual tenders offered or accepted ultimately, the fee of Messrs. Northcroft, Neighbour, and Nicholson, quantity surveyors, in regard to the proposed sewerage scheme for the portion of the borough north of the South-Eastern Railway, be agreed at seven-eighths per cent. on the sum of £52,000, this being the approximate cost of the quantities. A letter, it was stated, had been received from the Local Government Board to the effect that, while they were unable to sanction a loan at present, there was no reason why the council should not decide on a scheme, and put themselves in a position, by applying for sanction to the necessary loan, to proceed with the works as soon as the Board were able to give their sanction. The town clerk was directed to reply.

Labour Exchange offices which have been erected in Dock-street, Dundee, at a cost of £11,000, were formally opened on Friday by Lord Provost Don.

Mr. Edward Thomas Ivens, late of the India Public Works Department, died on Thursday in last week at his residence, 4, Corston-road, Ealing, in his seventy-first year.

An eight-story court-house is to be erected on Leonard, Lafayette, Duane, and Baxter streets by the City of New York, at an estimated cost of 10,000,000dol. Mr. G. Lowell, of 225, Fifth-avenue, New York, is the architect.

The Dumbartonshire County Council have made the following changes in the road surveyor's department: Mr. Archibald Wilson, county road surveyor since 1868, to be advising surveyor and consulting engineer; Mr. James Andrew, assistant to Mr. Wilson, to be county road surveyor; and Mr. Peter Miller to be assistant road surveyor.

Mr. J. Chambers, James-street, Boston, Lines, head stonemason for Messrs. Sherwin, contractors, has met with a serious accident while engaged in the restoration work of St. Mary's Church, Oldleake. He was on a ladder repairing a corbel in the roof of the north aisle, when the ladder broke, precipitating him on to the pews beneath. Both his legs were broken; but he is making satisfactory progress in a local hospital.

Archæological investigations are being made in the crypt of the Church of St. Mary-le-Bow. Pieces of Roman brick and roofing-tile and four small pieces of Samian red pottery of the first century A.D. have been found, together with some Roman wooden boarding and piles used for campsheeting a stream, probably in the second century. The vestry have resolved to present the boards and piles to the Guildhall Museum.

At Rochdale, a disused warehouse on an isolated site facing Yorkshire-street and three other thoroughfares has been reconstructed as a picture-palace, the Ceylon. The auditorium measures internally 79ft. by 33ft., and the floor is of the saucer-type, sloping down from the entrance doors towards the stage, where it rises again. A balcony at the rear, seated for 130, is carried on steel columns, and there are nearly 700 seats in the area. Messrs. Butterworth and Duncan, of Baillie-street, are the architects. Mr. Timothy Ashworth, of Norden, has had charge of the general contract.

Various works of art have recently been presented to the Corporation for the Art Gallery at the Guildhall. Mrs. Edmund Gosse gave a painting by Lady Alma-Tadema entitled "The Sonnet"; Mr. T. L. Devitt presented "Wild Cherry Trees in the South Tyrol," by Mr. Adrian Stokes, A.R.A., and "The Net Mender," by Mrs. Adrian Stokes. Miss E. P. McGhee was the donor of two water-colour paintings, "Showery Weather," by Mr. David Murray, R.A., and "Lincoln," by Mr. Albert Goodwin, R.W.S. Other donors of paintings were Mr. R. W. Allars and Mr. T. Gordon Stowers.

St. Stephen's Club, facing the Clock Tower and Boalieu Statue at the west end of the Victoria Embankment, is being restored after the disastrous fire which occurred at the beginning of the year. An additional story has been added, providing nineteen beds for members and fresh kitchen and staff accommodation. The French Renaissance design adopted by the original architect, the late Mr. John Whichcord, has been adhered to, and red tiles have been utilised for the roof. The internal improvements include a new electrical system and steam-heating plant and the enlargement of the dining-room. Mr. James Carmichael, of Wandsworth, is the contractor.

Our Office Table.

An important exhibition of Whistler's works is now open at the galleries of Messrs. Colnaghi and Obachs, 144-146, New Bond-street. The display consists of pictures in oil, pastels, and drawings, and should prove of exceptional interest, as it is the first exhibition to be opened since the "Memorial" of 1905. Thanks to the generosity of the collector, the proceeds are to be given to the Professional Classes War Relief Council. Admission 1s. Open daily from 10 till 6, Saturdays 10 till 1 p.m.

The making of Portland cement is being commenced in India. The plant is the property of the Katni Cement and Industrial Co., Ltd., and is expected to turn out from 30,000 to 35,000 tons of cement per year. This will be manufactured by the wet process in rotary kilns driven by electric power. In addition to the cement-works, the same company has erected works for the manufacture of roofing, ridge, and ceiling tiles, glazed wall and flooring tiles, firebricks, glazed drainages, pipes, glazed earthenware troughs for carrying electric cables, acid-proof jars, and a number of hospital necessities.

Mr. Milford, Oxford University Press, is about to add to his "Church Art in England" series, of which Mr. Francis Bond is general editor, a volume dealing with pulpits, lecterns, and organs in English churches. The author is the Rev. J. Charles Cox, LL.D., whose books on the churches of various countries are so well known, and there are no fewer than 155 illustrations.

A fifth edition of "Pocket Notes and Remembrancer" for sanitary inspectors and all engaged in public-health work, by J. T. Cowderoy, M.S.I.A. (London: Sanitary Publishing Co. 2s.), will be welcomed by all who have found the past editions so useful. Any health official or member of a sanitary committee who may not know the work is advised to get it at once. It is indispensable, and will be found thoroughly brought up to date.

Mr. Thomas Groom Barker, of 60, Gilda Brook-road, Eccles, and of Messrs. Barker, Ellis, and Jones, architects, 20, Cooper-street, Manchester, died on March 6, aged 85 years, leaving property of the gross value of £14,912, with net personalty £10,634. The testator leaves the whole of his property in trust to pay the income thereof to his sister for life. On her decease £1,200 is to be paid to his nieces, £600 to the Manchester Infirmary, £400 to St. Mary's Hospital, Manchester, £400 to the Victoria University, £150 to the Royal School for the Deaf and Dumb, Old Trafford, £150 to the Manchester Grammar School, Old Millgate, £150 to Chetham Hospital, £50 to Dr. Barnardo's Homes, £50 to the Wood-street Mission, Manchester, £50 to the National Lifeboat Institution, and one-half of the residue to the Institute of Architects, for general purposes, and one-half to the Victoria University towards the endowment fund of the Chair of Architecture.

The Sanitas Company, Ltd., which has from its start enjoyed the direction of the well-known chemist, Mr. C. T. Kingzett, F.I.C., F.C.S., has had a prosperous year, and at the annual meeting last week, Mr. Kingzett, who presided, stated that the company's sales had exceeded those of any previous year, although the percentage of profits had fallen. In spite, however, of the unsettling circumstances caused by the War, they had done extremely well, and the directors were able to maintain the dividend they had been in the habit of paying for many years, and to show an increased net profit. Mrs. Samson, who supported the motion for the adoption of the report, said she was glad that the directors had not "taken fright" like some other companies, and stopped advertising when the War began. She urged the board to press forward as far as they possibly could with the company's domestic trade, and expressed her opinion that the present was the time to advertise very extensively in that direction.

Trade News.

WAGES MOVEMENTS.

STEEL PRICES ADVANCED.—The English and Scottish Steelmakers' Associations, at a joint conference held in London on Friday, decided to advance the official minimum export price of plates by 10s. per ton. Owing to the pressure of orders, the old minimum had already become to a large extent inoperative. Quotations varying from £10 to £10 5s. per ton are now anticipated. Steel plates for home delivery are not now under association control. The quotation is round £10, less 5 per cent. per ton, and is very firm.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY AND SATURDAY (TO-DAY AND TO-MORROW).—Institute of Municipal and County Engineers. Scottish District Meeting at County Buildings, Ayr.

SATURDAY (TO-MORROW).—Edinburgh Architectural Association. Visit to Gogar House, Corstorphine. Leave Waverley Bridge by the Uphill Motor Omnibus 2.30 p.m. Institution of Municipal and County Engineers. Eastern District Meeting at the Town Hall, Southall. "Fourteen Years' Municipal Work in a London Suburb," by Reginald Brown; and "Fitting-up and Working of a Sewage Works Laboratory," by J. H. Edmondson. 2 p.m. Association of Managers of Sewage Disposal Works. Visit to the Manchester Sewage Disposal Works at Davyhulme, Urmston. 3 p.m.

MONDAY.—Royal Institute of British Architects. Reports of Scrutineers on the Elections of Councils and Standing Committees; Elections of Fellows and Associates (Business Meeting). 8 p.m.

FRIDAY (JUNE 11).—Royal Sanitary Institute. Provincial Sessional Meeting at Bristol. Discussion on "The Co-ordination of Military and Civil Sanitary Services in War Time," to be opened by Dr. D. S. Davies, Medical Officer of Health, Bristol. 11 a.m.

Mr. Valentine D. Doyle, of Athlone, has been elected county surveyor to the county council of Longford.

Mr. R. C. Bryan, assistant surveyor at Louth, Lincs, has been appointed surveyor and sanitary inspector to the Wicksworth Urban District Council.

Mr. Fred Howarth, deputy borough engineer of Bacup, has been appointed surveyor to the urban district council of Church, near Accrington, in succession to Mr. J. B. Fallowfield, resigned.

The Lincoln County Council have decided to proceed with the enlargement of the county lunatic asylum at Bracebridge, near Lincoln, on the basis of an expenditure not exceeding £1,000 per month. Mr. F. Parker, of Boston, is the architect, and the estimated cost of the work is £40,000.

A branch free library in Essex-road, Ealing, to serve the south-eastern district of that parish, is in course of erection. Mr. Mervyn Macartney, F.R.I.B.A., is the architect, and the contract has been let to Messrs. Patman and Fotheringham, of Theobald's-road, Bloomsbury, and Park-street, Islington.

At Conway, Mr. W. O. E. Meade-King, an inspector under the Local Government Board, held an inquiry yesterday (Thursday) into an application by the Conway and Colwyn Bay Joint Water Board for sanction to borrow £6,000 for constructing a bridge and for water-mains in accordance with plans by their engineer, Mr. Farrington.

One of the most important discussions at the recent annual meeting of the American Concrete Institute Convention was on Floors—How to Prevent Dusting. It appears to be fairly settled that fine material must be absent from the top course. Fairly coarse hard stone or sand (none of it passing a 30-mesh screen) is recommended, and hard stone has the preference over sand.

At the meeting of the City Council at the Guildhall, E.C., yesterday (Thursday) afternoon, an agreement was signed between the Corporation and the Peabody Trustees for the sale of 30,000 square feet of land on the south side of Sumner-street, Southwark, at 7s. per square foot, for the erection thereon by the trustees of working-class dwellings to accommodate persons displaced by the Corporation under the provisions of the Corporation of London (Bridges) Act, 1911.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the Editor of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

*Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits, on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

Telephone: Gerrard 1291.

Telegrams: "Timeserver, Estrand, London."

NOTICE.

Bound copies of Vol. CVII. are now ready, and should be ordered early (price 12s. each, by post 12s. 9d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XL., XLVI., XLIX., LII., LLI., LIII., LXIV., LXV., LXVI., LXVII., LXVIII., LXIX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., LXXVII., LXXIX., LXXX., LXXXI., LXXXII., LXXXIII., LXXXIV., LXXXV., LXXXVI., LXXXVII., LXXXVIII., LXXXIX., XC., XCI., XCII., XCIII., XCIV., XCV., XCVI., XCVII., XCVIII., XCIX., C., CI., CII., CIII., CIV., CV., CVI., and CVII. may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

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*The special rate to Canada is £1 3s. 10d. = 5dols. 80c. for 12 months, and 11s. 11d. = 2dols. 90c. six months. Our Direct Subscription Agents for Canada are Messrs. Sells, Ltd., 302, Shaftnessy Buildings, McGill-street, Montreal, who will receive Subscriptions, £1 3s. 10d. per annum, on our account.

*Our Direct Subscription Agents for Australia are Messrs. E. T. Kibblewhite and Co., Printers and Publishers, 19, York Chambers, 105, Liverpool-street, Sydney, New South Wales; for Japan, Messrs. Z. P. Maruya and Co., Ltd., 11-16, Nionbashi Tori Saichome, Tokyo; who will receive Subscriptions at £1 6s. per annum on our account. Copies of the paper will be sent by us direct to the subscribers' addresses.

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Advertisements for the current week must reach the office not later than 3 p.m. on Tuesday. Front-page advertisements and alterations or stop orders for serial advertisements must reach the office by the previous Saturday morning to secure attention.

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RECEIVED.—F. J. B.—E. P. A. and Son.—A., Ltd.—F. McN. and Co., Ltd.—S. G. Co., Ltd.—C. of S.—W. A. B. and Co.—W. G. and Sons.—W. H. W.—F. W.—M. and Co., Ltd.

ARAM.—Yes.

T. B. S.—Thanks, no.

R. J. McD.—Yes, if brief.

F. F. T.—We cannot undertake to check items. 2. No.

D. S.—Practically the change of date in our day of publication will make no difference, except that the bulk of the news will be fresher, and the majority of readers will be advantaged by getting it on Wednesday—especially in the provinces.

MATABLEE.—Perfectly possible, given aptitude and perseverance. We have just been talking to an old employee much older than yourself who has done it. It would be necessary to master one of the trades first—say carpentry, and desirable to attend one of the many good trade schools in England. One of the best is the Brixton School of Building, which is under the London County Council.

ENQUIRE.—In the absence of any definite arrangement being made as to an agreed extension of time consequent upon further work being ordered, by the building owner through his architect, to be carried out on a contract, when the builder receives his instructions to do such extension work or extras the architect is bound to allow the contractor a reasonable extension of time accordingly. The penalty named in the contract for non-completion cannot be enforced unless a specific arrangement is made with the builder in writing to the effect that the additional or extra works in question shall not vitiate the completion clause. It would, of course, be fairly presumed that the agreed price thus settled on for the cost of such an increase of work was then and there reckoned by the contractor sufficient to justify his taking an additional risk incurred by him of not being able to finish the job by the specified time.

TRADE NOTES.

The part of the balcony railing at the Regent Palace Hotel carrying the name of the hotel was made by Messrs. H. W. Cashmore and Co.

Underground heating-chambers are severely tested by such wet weather as we have had during the past winter, so that a material which will assure their watertightness is very desirable. In this connection, the heating-chamber of the Birkdale Liberal Club at Southport was recently lined with Pudloed cement, and we understand the result is satisfactory.

Mr. T. H. Scott, M.I.C.E., burgh engineer and surveyor of Inverness, has been appointed engineer and surveyor of Port of Spain, Trinidad. He has been burgh surveyor of Inverness for about ten years.

The newly-formed urban district council for Beddington and Wallington have appointed Mr. S. F. R. Carter, of Isleworth, as surveyor, at a salary of £300 per annum. There were 240 applications for the position.

At the annual election of officers of the United States National Academy of Design, Mr. John Alden Weir was elected to the presidency, and Mr. Howard Russell Butler, of Princeton, vice-president, vice Mr. Herbert Adams. Mr. Harry W. Watrous was re-elected as corresponding secretary, and Mr. Charles C. Curran as recording secretary, and Mr. Francis C. Jones, treasurer. Mr. Weir, the newly-elected president, was born in West Point, N.Y., in 1852.

An Ohio State Association Chapter of the American Institute of Architects has just been provided with headquarters at Columbus. Mr. George M. Anderson, of Cincinnati, has been elected president, Mr. C. W. Bellows, of Columbus, vice president, and Mr. Herbert B. Briggs, of Cleveland, secretary and treasurer. At the inaugural dinner and meeting the association voted a recommendation to the general assembly for the enactment of a state building code which will give Ohio cities the largest possible measure of home rule in the regulation of building construction.

The urban district council of Selby who built 42 workmen's dwellings two years ago in Flaxley-road are building 98 more in streets off that thoroughfare, and 39 dwellings of a larger type in Armoury-road. The rental will be 7s. and 7s. 6d. per week. In accordance with the provisions of the Housing and Town Planning Act, 212 houses have been inspected during the past year, mainly in the yards and courts in Ousegate and the shipyard district. Sixty-one of these were found to have sanitary defects, chiefly dampness, defective spouting, or bad conditions of the yards, and in nearly all cases the houses have been put into good repair.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

Owing to stoppage of supplies, all prices have advanced considerably.

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English	£9 12 6 to £9 17 6	
Wrought-Iron Girder Plates	9 15 0 .. 10 0 0	
Steel Girder Plates	9 15 0 .. 9 17 6	
Bar Iron, good Staffs	6 5 0 .. 8 10 0	
Do., Lowmoor, Flat, Round, or Square	22 0 0 .. 0 0 0	
Do., Welsh	5 15 0 .. 5 17 0	
Boiler Plates, Iron—		
South Staffs	8 0 0 .. 8 15 0	
Best Smedshill	9 0 0 .. 9 10 0	
Angles 10s., Tees 20s. per ton extra.		
Builders' Hoop Iron, for bonding, £12 5s. to £12 15s. Ditto galvanised, £19 to £19 10s. per ton.		
Galvanised Corrugated Sheet Iron—		
No. 18 to 20.	No. 22 to 24	
6ft. to 8ft. long, inclusive Per ton.	Per ton.	
gauge	£13 0 0 .. £13 10 0	
Best ditto	13 10 0 .. 14 0 0	

	Per ton.	Per ton.
Cast-Iron Columns	£6 17 6 to £8 10 0	
Cast-Iron Stanchions	6 17 6 .. 8 10 0	
Rolled-Iron Fencing Wire	8 5 0 .. 8 10 0	
Rolled-Steel Fencing Wire	7 5 0 .. 7 10 0	
Galvanised	8 15 0 .. 9 5 0	
Cast-Iron Sash Weights	6 0 0 .. 6 5 0	
Cut Floor Brads	10 15 0 .. —	
Corrugated Iron, 24 gauge	16 0 0 .. —	
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14 5 0 .. —	

B.B. Drawn Telegraph Wire, Galvanised—	0 to 8	10	11	12	B.W.G.
£10 10s. £10 15s. £11 0s. £11 5s. £11 10s. per ton.					

Cast-Iron Socket Pipes—	Per ton.	Per ton.
3in. diameter	£6 15 0 to £7 2 6	
4in. to 6in.	6 10 0 .. 6 12 6	
7in. to 24in. (all sizes)	6 17 6 .. 7 2 6	
[Coated with composition, 5s. 0d. per ton extra. turned and bored joints 5s. per ton extra.]		

Iron—	Per ton.	Per ton.
Cold Blast, Lillieshall	80s. 0d. to 127s. 6d.	
Hot Blast, ditto	87s. 0d. .. 97s. 0d.	

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—		
Gas-Tubes	67½ p.c.	
Water-Tubes	68½ ..	
Steam-Tubes	60 ..	
Galvanised Gas-Tubes	55 ..	
Galvanised Water-Tubes	51½ ..	
Galvanised Steam-Tubes	45 ..	

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	*£28 10 0 to	
" " Country	27 10 0 ..	
Lead Barrel Pipe, Town	27 10 0 ..	
" " Country	28 10 0 ..	
Lead Pipe, Tinned inside, Town	28 10 0 ..	
" " Country	29 10 0 ..	
Lead Pipe, Tinned inside and outside	31 0 0 ..	
" " Country	32 0 0 ..	
Composition Gas-Pipe, Town	29 10 0 ..	
" " Country	30 10 0 ..	
Lead Soil-pipe (up to 4in.) Town	29 10 0 ..	
" " Country	30 10 0 ..	
[Over 4in. £1 per ton extra.]		
Lead, Common Brands	17 17 6 .. £18 12 6	
Lead Shot, in 28lb. bags	24 15 0 ..	
Copper Sheets, sheathing & rods	100 0 0 .. 101 0 0	
Copper, British Cast and Ingot	88 0 0 .. 90 0 0	
Do., English Ingots	164 0 0 .. 165 0 0	
Do., Bars	165 0 0 .. 166 0 0	
Pig Lead, in 10wt. Pigs (Town)	20 15 6 .. 21 2 6	
Sheet Lead, Town	26 0 0 ..	
" " Country	27 0 0 ..	
Genuine White Lead	34 0 0 ..	
Refined Red Lead	31 0 0 ..	
Sheet Zinc	83 0 0 (net)	
Old Lead, against account	20 10 0 ..	
Tin	9 0 0 ..	
Cut nails (per cwt. basis, ordinary brand)	0 11 0 ..	

* For 5 cwt. lots and upwards.

SLATES.

	in.	in.	£ s. d.	per 1,000 of
Blue Portmadoc	20	10	12 12 6	1,200 at r. stn.
" "	16	8	6 12 6	" "
Blue Bangor	20	10	13 2 6	" "
" "	20	12	13 17 6	" "
First quality	20	10	13 0 0	" "
" "	20	12	13 15 0	" "
Eureka unfading green	20	10	15 17 6	" "
" "	20	12	18 7 6	" "
" "	18	10	13 5 0	" "
" "	16	8	10 5 0	" "
Permanent Green	20	10	11 13 6	" "
" "	18	10	9 12 6	" "
" "	16	8	6 12 6	" "

BRICKS.

(All prices net.)

First Hard Stocks	£1 15 0	per 1,000	alongside, in
Second Hard Stocks	1 11 0	"	" (river.
Mild Stocks	1 9 0	"	"
Picked Stocks for			delivered
Facings	2 5 0	"	at rly. stn.
Flettons	1 14 0	"	"
Pressed Wire Cuts	1 18 0	"	"
Red Wire Cuts	1 14 0	"	"
Best Fareham Red	3 12 0	"	"
Best Red Pressed			"
Ruabon Facing	5 0 0	"	"
Best Blue Pressed			"
Staffordshire	3 15 0	"	"
Ditto Bullnose	4 0 0	"	"
Best Stourbridge			"
Firebricks	4 0 0	"	"
2in. Best Red Accrington Plastic Facing Bricks	4 10 6	"	(Net, delivered in full truck loads in London.
3½" Accrington Best Red Plastic Facing per 1,000			£2 10 0
3½" ditto Second Best Plastic ditto			2 2 6
3½" ditto Ordinary Secondary Bricks			1 11 3
Ditto Plastic Engineering Bricks			1 17 6
Sewer Arch Brick not more than 3½ in. thickest part			2 0 0
3½" Chimney Bricks fit for outside work			2 6 0
3½" ditto ditto through and through			2 0 0
3½" Beaded, Ovolo and Bevel Jamb; Octagons; 2½" and 3½" radius Bullnoses; Stock patterns			3 7 6
Accrington Air Bricks, 9" x 9" course deep, each			0 0 6
Ditto ditto 9" x 1 course			0 0 3
Accrington Camber Arches:—			
3 course deep, 4½" soffit, per foot opening			0 1 3
4 ditto 4½" ditto ditto ditto			0 1 8
5 ditto 4½" ditto ditto ditto			0 2 1
6 ditto 4½" ditto ditto ditto			0 2 6
3 ditto 9" ditto ditto ditto			0 2 1
4 ditto 9" ditto ditto ditto			0 2 11
5 ditto 9" ditto ditto ditto			0 3 6
6 ditto 9" ditto ditto ditto			0 4 6
Net free on rail, or free on boat at works.			

GLAZED BRICKS.

HARD GLAZES (PER 1,000).

White, Ivory, and Salt Glazed. Best.	Buff, Cream, Other Second.	Best. Bronze. Colours.	Second Colours.
Stretchers—	£12 7 6	£10 17 6	£13 17 6
Headers—	11 17 6	10 7 6	13 7 6
Quoins, Bullnose, and 4in. Flats—	15 17 6	14 17 6	17 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6
Double Headers—	14 17 6	13 7 6	17 17 6
One side and two ends, square—	15 17 6	17 17 6	21 17 6
Two sides and one end, square—	19 17 6	18 7 6	22 17 6
Spalls and Squints—	17 7 6	15 7 6	21 17 6
Plinth and Hollow Bricks, Stretchers and Headers—	5d. each	4d. each	6d. each
Double Bullnose, Round Ends, Bullnose Stops—	5d. each	4d. each	6d. each
Rounded Internal Angles—	4d. each	3d. each	5d. each
MOULDED BRICKS.			
Stretchers and Headers—	8d. each	8d. each	8d. each
Internal and External Angles—	1½ each	1½ each	1½ each
Sill Bullnose, Stretchers, and Headers—	5d. each	4d. each	6d. each
Majolica or Soft Glazed Stretchers and Headers	£22 17 6		
Quoins and Bullnose.....	27 17 6		
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours			Not exceeding 9in. by 4½in. by 2½in.
Camber arch bricks, any kind or colour, 1s. 2d. each			

* These prices are carriage paid in full truck loads to London Stations.	s. d.
Thames Sand	7 6 per yard, delivered
Pit Sand	7 0 ..
Thames Ballast	6 0 ..

Best Portland Cement	36 0 to 41 0 delivered
Ground Blue Lias Lime	21 6 per ton delivered

Exclusive of charge for sacks.

Grey Stone Lime	s. d.	s. d.	Per yard.
Stourbridge Fireclay in sacks	13 6 to 14 0 delivered		
at railway station.	27s. 0d. per ton at		

STONE.*

Red Mansfield, in blocks	per foot cube	£0 2 4
Darley Dale, ditto	"	0 2 3
Red Corsehill, ditto	"	0 2 2
Closeburn Red Freestone, ditto	"	0 2 0
Ancester, ditto	"	0 1 10
Greenshill, ditto	"	0 1 10
Beer, ditto	"	0 1 6
Chilmark, ditto (in truck at Nine Elms)	"	0 1 10½
Hard York, ditto	"	0 2 0
Do. do. 6in. sawn both sides, landings, random sizes	per foot sup.	0 2 8
Do. do. 3in. slab sawn two sides, random sizes	"	0 1 3

* All F.O.B. London.

Bath Stone, delivered on road	£ s. d.
waggons, Paddington Depot per foot cube	0 1 7½
Ditto, ditto, Nine Elms Depot	0 1 9½
Beer Stone, delivered on rail	"
at Seaton Station	0 1 1
Ditto, delivered at Nine Elms	"
Station	0 1 7½
Portland Stone, in random blocks of 20ft. average:—	
Delivered on road waggons	Brown White
at Paddington Depot,	Whit Bed. Base Bed.
Nine Elms Depot, or	Per foot cube.
Pimlico Wharf	£0 2 3 .. £0 2 4½

TILES.

	s. d.	Delvd. at
Plain red roofing tiles	42 0 per 1000	ry. sn.
Hip and Valley tiles	3 7 per doz.	"
Broseley tiles	50 0 per 1000	"
Ornamental tiles	52 6 ..	"
Hip and Valley tiles	4 0 per doz.	"
Ruabon red, brown, or brindled ditto (Redwards)	57 6 per 1000	"
Ornamental ditto	60 0 ..	"
Hip tiles	4 0 per doz.	"
Valley tiles	3 0 ..	"
Selected "Perfecta" roofing tiles: Plain tiles (Peake's)	46 0 per 1000	"
Ornamental ditto	48 6 ..	"
Hip tiles	3 10½ per doz.	"
Valley tiles	3 4½ ..	"
"Rosemary" brand plain tiles	48 0 per 1000	"
Ornamental tiles	50 0 ..	"
Hip tiles	4 0 per doz.	"
Valley tiles	3 8 ..	"
Staffordshire (Hanley) Reds or brindled tiles	42 6 per 1000	"
Hand-made sand-faced	45 0 ..	"
Hip tiles	4 0 per doz.	"
Valley tiles	3 6 ..	"
Hartshill "brand plain tiles, sand-faced"	45 0 per 1000	"
Pressed	42 6 ..	"
Ornamental ditto	47 6 ..	"
Hip tiles	4 0 per doz.	"
Valley tiles	3 6 ..	"

OILS.

Rapeseed, English pale, per tun	£28 15 0 to £29 5 0
Ditto, brown	26 15 0 .. 27 5 0
Cottonseed, refined	29 0 0 .. 30 0 0
Olive, Spanish	39 10 0 .. 40 0 0
Seal, pale	21 0 0 .. 21 10 0
Cocconut, Cochiti	46 0 0 .. 46 10 0
Ditto, Ceylon	42 10 0 .. 43 0 0
Ditto, Mauritius	42 10 0 .. 43 0 0
Palm, Lagos	32 5 0 .. 33 5 0
Ditto, Nut Kernel	35 0 0 .. 35 10 0
Olefin	17 5 0 .. 19 5 0
Sperm	30 0 0 .. 31 0 0
Lubricating, U.S.	0 7 0 .. 0 8 0
Petroleum, refined	0 0 6½ .. 0 0 6
Tar, Stockholm	1 6 0 .. 1 10 0
Ditto, Archangel	0 19 6 .. 0 20 0
Linseed Oil	0 2 11 ..
Baltic Oil	0 3 3 ..
Turpentine	0 3 1 ..
Putty (Genuine Linseed Oil)	0 9 0 ..
Pure Linseed Oil	0 9 0 ..
"Stority" Brand	0 9 0 ..

GLASS (IN CRATES).

English Sheet Glass: 15oz.	21oz.	26oz.	32oz.
Fourths	4½d. ... 5½d. ... 5½d. ... 6½d.		
Thirds	4½d. ... 5½d. ... 5½d. ... 7½d.		
Fluted Sheet	5d. ... 6d.		
Hartley's English Rolled Plate	3½d. ... 3½d. ... 3½d. ... 4½d.		
Figured Rolled and Repousse	5d. ... 6½d. ...		

VARNISHES, &c.

	Per gallon
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 6
Fine Elastic Carriage	0 12 9
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Fine French Oil	1 1 0
Eggshell Flattening Varnish	0 18 9
White Copal Enamel	1 4 9
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 6

The sanatorium at Little Heath, Belvedere, is about to be extended at a cost of £2,850. The plans were prepared by Mr. H. Hind, surveyor to the urban district council of Enith, and the contract has been taken by Mr. R. N. Marrable, of Pretoria-road, Leytonstone.

Mr. Francis Frederick Fox, for many years head of a firm of oil and colour merchants in Little George-street, From Bridge, Bristol, died on Monday, in his eighty-third year. From 1865 till 1871 and from 1877 till 1901 he was an alderman of the city council, and rendered important services in relation to dock matters. He also served for many years as president of the Bristol and Gloucestershire Archaeological Society, and had written and lectured on the guilds of Bristol and on rood-screens.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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Strand, W.C.

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OUR ILLUSTRATIONS.

New Parliament Buildings, Ottawa, Canada. View from the River and block plan. Design by Mr. E. Vincent Harris, F.R.I.B.A., Architect.
Convent of the Sisters of Bethany at Bourne-mouth. The New Chapel. Elevations, plan, and sections.

Mr. Ernest Newton, A.R.A., P.R.I.B.A., Architect.
Prudential Insurance Company's New Building, Stockton-on-Tees. Mr. Paul Waterhouse, M.A., F.R.I.B.A., Architect.
Crow Clump, Weybridge, Surrey. The Garden Front. Messrs. Tubbs, Messer, and Poulton, Architects.
Selected Design, Lightbown Cottage Homes, Owlett Hall Road, Darwen. Elevations, section, and plan. Messrs. Sames and Green, Architects.
Isolation Hospital, Bennett's End, Hemel Hempstead. Messrs. John Saxon Snell and Stanley M. Spoor, Licentiate R.I.B.A., Architects.

CHANGE OF DAY OF PUBLICATION.

From to-day **THE BUILDING NEWS** will be published every week on *Wednesday* morning at the usual hour, instead of on Friday.

At the moment the reason for the change is urgent. Owing to the interruption in traffic, we receive every week complaints from readers who cannot get their paper on Fridays, owing to delay in transit.

But when quiet times come again we shall, in all probability, continue to publish on *Wednesday*. There are many reasons in favour of the change, not the least being the growing disposition to regard the Saturday as a *dies non* as far as business is concerned.

In any case, no one will suffer disadvantage if our readers and advertisers will make a note that all matter for publication and advertisements must reach us for the current issue in future by 3 p.m. on Tuesdays, instead of Thursdays.

Many readers, in response to our announcement of the change during the last two weeks, have written congratulating us and expressing their conviction that it will enhance the usefulness of our efforts during the last sixty years to promote the general welfare of the important industries we represent, and that it will facilitate the appreciated co-operation of the many friends who have rendered us such constant and invaluable help.

PLANNING TO MODULE.

Planning to definite module is constructionally sound and economical. In a sense, we always thus plan, since the module of the practical designer is not half a column's diameter, but the standard unit of measurement. So long as we draw our plans to a "scale of — feet to an inch," we, in a way and to a degree, design to module. Our ideas here, however, have reference rather to the consistent adoption of unit distance, as between window or pier centres. In steel-frame construction, especially, considerable economies are effected by adopting, so far as possible, a set distance between stanchion centres. The work of the designer and his calculations are facilitated, but the economies secured are chiefly on the score of labour in preparation and erection of the structure. By maintaining a regular distance from stanchion to stanchion, and so increasing the number of beams and supports that can be cut to uniform length and holed to template, work in the engineering shops is very considerably lessened. The practice facilitates the adoption of a

standard joist or steel section for stanchions, strengthened solely by means of added plates and riveting to meet the increasing loads in lower stories. Connections and boltholes to similar detail, being required in quantities, "jigs" can be employed in machining, considerably expediting and lessening the cost of work prior to delivery on the building. Erection and bolting up *in situ* are accelerated. All this means time and money saved. Just as standardisation reduces cost of machinery manufacture, the introduction, so far as practical requirements of plan allow, of a system of uniform distances between points of support helps to keep down the cost of steel framings. Obviously, to a greater or less extent the arguments hold good for all modes of building construction.

In addition to economy in construction there are architectural reasons why we do well to cut our designs to a self-imposed standard or module, or to a standard imposed by practical requirements of plan. We by this means go at once a long way towards ensuring true architectural effect, which, being at root founded on order, is plainly so where unit part repeats. The more the architect brings his architectural inspirations under rigid rule, the more he honours this root-cause of the architectural as distinct from haphazard, disorderly, and nondescript building. In architecture, again, there are two very obvious rules of design—one demanding, for vertical division, irregularity and contrast, the other, for horizontal spacing, requiring regularity and monotone. Now, since all things seem mainly appreciable by contrast, the true opposition to regular division would appear to be the irregular. When we say that such-and-such is regularly divided, we *ipso facto* institute comparison with irregularity. Hence we should be able to enhance the value of irregular division by regular monotony; and it may be that, besides contrasting literally with horizontal lines the vertical lines of a building, being, as we see, of necessity equal-spaced, for order's sake, are a foil to the varied dimension in horizontal strata. We may perhaps compare this to cases where, as an exception, vertical features are the subject of regular division, and in opposition to the main irregular stratification. It is conceivable that an imposing pier or piers, regularly rusticated every foot, say, acts as foil to the varied and contrasted dimension and proportioning of features such as cornices, stringcourses, caps, and bases. If this idea meets with the approval of the reader, we might suggest, further, that the great monotonous uprising of vertical spaces,

equi-intervalled, the result of strict module planning, exalts the effect of contrasted and irregular distances of horizontal lines, which varied stratification, gracefully accomplished, seems possibly a part solution of the mystery of architectural "proportion."

There are other advantages attendant upon the adoption of special and consistent module in planning. Mental labour is lightened by early decision on some principle of plan division. The practice is advantageous to the architect, with his multifarious duties. Given a base from which the module sets out, such as a building line or other fixed point and direction, the immediate decision upon a ruling dimension between void or support centres affords the mind, searching for a key or solution to a plan problem, an anchorage. Whatever else eventuates, the planner has decided on a module; and, so far, his mind is freer from harking back and forth in search of master and secondary keys. Something, at any rate, is decided, say a 10, 15, or 20-foot module. The relief is somewhat of the nature of that we experience in planning alterations and additions; for in this case existing walls and features to be retained form a definite basis for mental operation—we are perforce tied to certain ways, generally obvious. Potential variables are reduced in number.

Where a plan has a definite axis, as in cruciform churches, this may generate the module. Axial planning is, in a sense, always easy, or, at any rate, not troublesome, because we have that datum which the planner so earnestly seeks. All his endeavours are from solid foundation, so to say, and from the cross he builds up in a plane, as surely and easily as the bee constructs, in three dimensions, from its artificial "foundation" cells. The centre of the crossing is linked to every part of the plan, so that much of the mental striving for full expression of nebulous idea, the inevitable accompaniment of complicated plan evolution, is absent. That which we all feel to want in first commencing to thrash out a difficult plan is datum, base of action, and definite point of departure for our endeavours and for our sustained effort to give concrete expression to dormant and half-emergent theme. In altering old buildings we work with ease and certainty from some necessarily hard-and-fast fixed points, much as at the completion of the solution of a puzzle of which we have mastered the key. The competing architect well knows what we mean—the perplexity as to which of certain obvious alternatives will be likely to recommend itself to the judges; and such may esteem

himself fortunate, where the site and some one large feature or apartment leaves it, that there is, for the main setting out of the plan, but one practical arrangement. All these troubles and perplexities are, in practical business, considerably lessened by definite module planning.

In steel construction the module for pier and void must necessarily depend on the nature of the building, and is limited to a great extent by the economics and limitations of such construction. Even where the plan must perforce be of great irregularity, we may often do well to base it upon a module—we may be well advised in laying it down, if merely as a mental conception. In buildings of the warehouse and factory class the module system is easy and natural; and in many commercial buildings, as offices, hotels, and residences, orderly spacing of centres for steel supports is a convenient procedure. We need not—cannot, evidently—always keep in step with the controlling dimension. Having laid down, or holding mentally, a skeleton module plan, we may eliminate points here and there for large apartments and for necessarily irregular and angular breaks into the fundamental and rectangular for which we all naturally strive in building; but the main idea of adopting a set span or dimension is to return as quickly as possible to this, after any irregularity has been met and satisfied by suitable readjustment of points of support.

In planning, then, to definite module we decide on such module for bay or opening, of such size as may suit practical requirements and mode of construction, and so far as possible adhere to this throughout. In this way we not merely lessen the cost of construction, but, looking back into the past, we are only following in the footsteps of the designers of the world's great and famous buildings. Equally in the cathedral or the powerhouse, the consistent module makes for effect, allowing here some measure of the aesthetic in an orderly array of upended steel joists. In endeavouring to gain a standard distance between stanchions and to maintain, in unbroken series, voids and supports, we are in no way acting differently from the planners of great cathedrals. If, in such, a crossing was desired, bays were eliminated, and more powerful arches spanned the increased void; and so, where practical exigencies demand large apartments, we must obliterate some of our module points, strengthening other pillars and increasing the section of girders. To be most in accord with the principle we need to make the larger apartment a factor of the unit dimension.

It is an error to suppose that it is *infra dig.* to put oneself under rigid module in planning. In truth, it is a safeguard and a guarantee of ultimate dignity of effect. The grandeur of architecture is foreshadowed in the pricking-off, with set dividers, of aliquot parts of a whole dimension. We all greatly admire the majestic colonnade; but, after all, it is but the presentation to the eye of the most primitive of mathematical series—1, 1, 1, etc.; and the same may be said of Gothic arcading, or any repetition of similar span arches. The amount of dignity in architecture seems to be directly as the plane of order. Monotone in horizontal division gives us "breadth," as something opposed to petty change and patchiness. "Scale," again, in architecture, is concerned with the distance adopted between supports. Scale seems little more than a function of module.

Lacking something in the nature of *l'atium*, or *point d'appui*, such as we find

in altering old buildings, the module system of design will be found advantageous, more especially in the orderly evolution of complicated building plans.

THE ROYAL SOCIETY OF PORTRAIT PAINTERS.

This exhibition at the Grafton Galleries is not a large one—there are 161 exhibits, and not a few have been seen before, but most are of present topical interest, and there are not many which will be passed without notice.

In the Octagonal Gallery Mr. Hugh de T. Glazebrook has a creditable portrait study of the King (5). Mr. H. Harris Brown shows a portrait of General the Hon. Sir Neville Lytton, G.C.B. (6). There is an excellent portrait of Earl Kitchener, K.G., by the Hon. John Collier (8), and one of General Sir Horace Smith-Dorrien, G.C.B., by Mr. Arnold Mountfort (9). Many of our own readers will be interested in a youthful portrait of Sir Robert Lorimer, a drawing by Mr. J. H. Lorimer, R.S.A. (13), who also shows a small sketch portrait (12), "Lady im Thurn Serving." Mr. Hugh G. Rivière's portrait of Sir David Beatty (14), and that of Lord Fisher (18), by the late Sir Hubert von Herkomer, are both to be removed on Friday to the Guildhall Art Gallery. The late Mr. C. W. Furse's portrait of Earl Roberts (15) is a welcome addition to the list of the many naval and military heroes to be seen, among which, in the same room, are General Ivor Philipps, D.S.O. (26), by Mr. Ellis Roberts; Brigadier-General R. C. Boyle (30), by Mr. Ellis Roberts; and Sir John French, G.C.B. (45), by Mr. E. L. van Someren. Mr. J. S. Sargent's "Millicent, Duchess of Sutherland" (29) will please all who have not before had the chance to see it; and that of Prince George of Serbia (47), by the Princess Mary Erisstoff, will be new to all. Mr. J. J. Shannon's picture of H.R.H. Princess Mary (57) is to be sold for the benefit of the Queen's Work for Women Fund. Mr. John Lavery's portrait of Mr. Winston Churchill (58) will not be seen after Friday, when it also goes to the Guildhall Gallery.

The principal subjects of interest in the Centre Gallery are Lieut.-General Sir William Robertson, K.C.V.O. (71), by Mr. John St. Helier Lander; Earl Grey (72), by Mr. Fiddes Watt, A.R.S.A.; Sir George Hayter Chubb, Bart. (76), by Mr. Arthur T. Nowell; Sir John Furse, C.B. (81), by Mr. Hugh de T. Glazebrook; Sir Henry McMahon, our High Commissioner in Egypt (85), by the Hon. John Collier; and Mrs. Flora Annie Steel (95), the inimitable novelist whose Indian stories are familiar to all (95), by Mr. Arthur Bentley Connor.

The last-named artist has in the Long Gallery a remarkably good portrait of the Rev. Canon Connor. The Hon. John Collier has one of Mr. A. L. Francis, the headmaster of Blundell's School (99).

In the North Gallery, on the end wall, is an interesting series of sketches by Mr. Herbert A. Olivier for his "Where Belgium Greeted Britain" (133-142), including the King, King Albert, the Prince of Wales, General Joffre, and others. Mr. Arnold Mountfort has a portrait of Lady Smith-Dorrien (123); Mr. R. G. Eves one of the Marchioness of Bristol (143); Mr. J. S. Sargent a crayon drawing of Lady Randolph Churchill (150); and Mr. H. Harris Brown a portrait of Viscountess Curzon (155).

All the subjects are well hung, and the exhibition well deserves success.

The church at Ballyscallion, County Antrim, is about to be reconstructed from plans by Mr. J. V. Brennan, of Bank Chambers, Belfast.

THE ENGLISH COUNTRYSIDE.*

This is an enjoyable volume, and those who love the pleasant scenery of England and the harmonious blendings of the country and natural surroundings with the handiwork of man—be it church, manor house, cottage, barn, or bridge—owe much to the insight, feeling, and charm with which Mr. Pulbrook treats his theme.

It is true, as he remarks, that not the least among the attractions of our land is the absence for the most part of harsh or violent contrasts. Each of the common features of rural England, however simple its beginnings and development, has its proper place and function in relation to the rest. This special aspect of the English countryside has been kept in view throughout the work, which, commencing with an able introductory chapter on the spirit and character of the country in general, treats successively of the Coast, of Creeks and Streams, the Ford, the Bridge, and the Mill. Chapters on the Field, the Shepherd, and on ways of travel in footpath and by-road are followed by others on the different effects of man's settlement in communities—Village Greens, Towers, Inns, and Cottage Interiors; the volume concluding with special essays on Nature in the threefold aspects of Spring, Autumn, and Winter.

Avoiding abstruseness or learned disquisitions, Mr. Pulbrook conjures up, as far as may be, the true atmosphere of the country, and leads the average reader to see what wonders or pleasures are to be encountered in a day's walk in any part of England where he may chance to find himself. He has explored the heart of the country so intimately that one could not wish for a better or more sympathetic guide to its varying aspects and features.

The illustrations have been selected with care from many sources, some being the products of the author's own camera. They are drawn from many different parts of England, and thus aptly illustrate, for instance, the quiet charms of the home counties, the Chiltern Hills, the creeks and crosses of Cornwall, the coasts and combs of Devonshire, the old towns and villages of the Cotswolds, the by-roads of Hampshire, and many another varied aspect of the country. Altogether, in the 126 examples given there is presented a picture which, though in miniature, gathers up many of the charming features that reveal themselves at every turn throughout the English countryside.

And just now the book is doubly welcome. It is well that we of the present generation—shallow and superficial as many of us are—should begin to remember all that England meant, how her customs date back to the building of our race; her monuments recall a ceaseless fight against tyranny at home or abroad, and her old hamlets and quiet towns show the ordered settlement and gradual evolution of a prosperous countryside. How all combined serve to emphasise the age-long destiny of Britain and her influence on the world.

Under the influence of recent developments we find the present and the past joining hands in a manner impossible before the war. Tiny harbours which sent forth the cockle-shell warships of old now resound with the exhaust of motor-boat patrols; stalwart soldiers from overseas Dominions spend their leave visiting the homes of their forbears; and the coast searchlights recall the alarm beacons of old, while ancient earthworks stand close to the latest type of field fortifications that experience can suggest.

It is the past which has made England

* "The English Countryside." By Ernest C. Pulbrook. London: B. T. Batsford, Limited. 7s. 6d.

of to-day, and the present is but its continuation. Prehistoric trackway, ancient village, sleepy town, the farmhouse in the hollow, the sheepfold on the hill—all have rendered their share in the making of England and the building up of that race whose sons are emulating on the battlefield the deeds of their forefathers set forth in quaint inscription on the walls of many a village church or in the mouldering records of ancient boroughs.

Mr. Pulbrook is to be congratulated on his most opportune contribution to the needed literature of the moment. Rich man or poor man, home-born or from the Britains beyond the seas, "duke's son or cook's son," the man whose birthright includes all the beauty and the time-hallowed associations therewith he describes, will thank him for new inspiration and gather fresh strength and resolution therefrom to gird him for to-day's grim conflict with the powers of barbarism that would destroy it all!

THE ELECTIONS AT THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A business meeting of the Royal Institute of British Architects was held on Monday evening at 9, Conduit Street, W., Mr. H. Vaughan Lanchester, vice-president, in the chair.

ELECTION OF OFFICERS AND COUNCIL.

The following were reported by the scrutineers to be the results of the election of officers and council and members of committees for the session 1915-16:—

President:—Ernest Newton, A.R.A.

Vice-Presidents:—Sir John Burnet, R.S.A.; J. Alfred Gotch, F.S.A.; H. V. Lanchester; and Paul Waterhouse. (Not elected:—Alfred W. S. Cross, George Hubbard, and Edwin Landseer Lutyens, A.R.A.)

Hon. Secretary:—E. Guy Dawber.

Past Presidents:—Reginald Blomfield, R.A., and Thomas E. Collcutt.

Members of Council:—S. D. Adshead, Walter Cave, H. P. Burke Downing, W. Curtis Green, Henry T. Hare, E. Vincent Harris, Gerald Horsley, J. J. Joass, Arthur Keen, D. Barclay Niven, Alexander N. Paterson, A.R.S.A., Andrew N. Prentice, Harry Redfern, A. E. Richardson, E. A. Rickards, W. Gillbee Scott, H. D. Searles-Wood, and Percy S. Worthington. (Not elected:—H. V. Ashley, Max Clarke, A. J. Davis, Matt Garbutt, A. E. Jennett, Sydney Perks, S. Perkins Pick, A.R.A., E. R. E. Sutton, and Herbert Winkler Wills.)

Associate Members of Council:—Horace Cubitt, W. R. Davidge, L. Rome Guthrie, Herbert Shepherd, Philip E. Webb, and Herbert A. Welch. (Not elected:—John Anderson, G. Leonard Elkington, J. Ernest Newberry, and Leo S. Sullivan.)

Representative of the Architectural Association:—H. Austen Hall.

Representatives of Allied Societies:—Graham C. Awdry, Bristol Society of Architects; R. Burns Dick, Northern Architectural Association; F. B. Dunkerley, Manchester Society of Architects; Charles Kempson, Leics. and Leicestershire Society of Architects; Adam F. Watson, Sheffield Society of Architects; and John Watson, Glasgow Institute of Architects.

Hon. Auditors:—R. Stephen Ayling, Fellow, and A. W. Sheppard, Associate.

MEMBERS OF STANDING COMMITTEES.

Art Committee—Fellows:—E. Guy Dawber, W. A. Forsyth, J. Alfred Gotch, Gerald C. Horsley, Arthur Keen, H. V. Lanchester, Halsey Ricardo, G. Gilbert Scott, H. Heathcote Statham, and Edward P. Warren. Associates:—Robert Atkinson, H. S. East, L. Rome Guthrie, Basil Oliver, A. Wyatt Papworth, Philip E. Webb.

Literature Committee—Fellows:—A. T. Bolton, D. Theodore Fyfe, Andrew N. Prentice, G. H. Fellowes Prynn, A. E. Richardson, E. A. Rickards, C. S. Spooner, Arthur Stratton, C. Harrison Townsend, and Paul Waterhouse. Associates:—M. S. Briggs, W. J. Davies, Herbert Passmore, Stanley C. Ram-

sey, Walter L. Spiers, and W. Henry Ward. Practice Committee—Fellows:—W. H. Atkin-Berry, Max Clarke, H. O. Creswell, A. W. S. Cross, Matt Garbutt, Edward Greenop, George Hubbard, D. Barclay Niven, H. D. Searles-Wood, and A. Saxon Snell. Associates:—H. W. Cubitt, Percival M. Fraser, Edwin Gunn, Henry A. Saul, J. Douglas Scott, Herbert Shepherd.

Science Committee—Fellows:—Bernard Dicksee, W. E. Vernon Crompton, F. R. Farrow, C. Stanley Peach, H. Percy Adams, Professor R. E. Smith, R. Stephen Ayling, Alfred Conder, A. D. Collard, and Horace Cheston. Associates:—W. R. Davidge, G. Leonard Elkington, R. J. Angel, E. W. M. Wonnacott, Digby L. Solomon, and H. W. Burrows.

ELECTIONS OF FELLOWS AND ASSOCIATES.

The following candidates were elected membership under By-law 10:—As Fellows (17):—Robert Atkinson (Tite Prizeman, 1905); 199, Piccadilly, W.; Woodmansterne Corner, Carshalton. Charles Lovett Gill (Ashpitel Prizeman, 1904); 41, Russell Square, W.C.; 18, Denning Road, Hampstead, N.W.; Charles William Harris; 14, Harrington Street, Liverpool; 96, Durning Road, Liverpool. Laurence Hobson (Arthur Cates Prizeman, 1897); 14, Harrington Street, Liverpool; 15, Torrington Road, Liscard. David Bateman Hutton; 212, Bath Street, Glasgow; 21, Derby Crescent, Kelvin-side, Glasgow. James John Sydney Naylor; 19, Hanover Square, W.; 220, Gloucester Terrace, Hyde Park, W.; William Campbell Oman; Architect and Engineer Surveyor, Municipality, Singapore; Europe Hotel, Singapore. Frank Peck; 27, Old Queen Street, Westminster, S.W.; Abbotsmead, Kingston Hill, Surrey. Horatio Porter, M.A.; 16, Russell Square, W.C. Henry Albert Saul; 10, Gray's Inn Square, W.C.; Laurel Cottage, Thames Ditton. And the following seven Licentiates, who have passed the examination qualifying for candidature as Fellows:—John Alexander Allan (Godwin Bursar, 1909, Inst. Metallist, Essays, 1910); 25, Union Terrace, Aberdeen; The Grange, Cults, Aberdeenshire. Harold Baily; 4, The Broadway, Crouch End, N.; 198, Park Road, Crouch End, N. William Edward Carless; 49, Beaver Hall Hill, Montreal, Canada; 42, Souvenir Avenue, Montreal, Canada. Samuel Nathaniel Cooke, 117, Colmore Row, Birmingham; The Holt, Tenny Road, Harborne, Birmingham. John Stuart, County Hall, Wakefield, Yorks; Balgonie, Sandal, Wakefield. James Alfred Swan, 56, Newhall Street, Birmingham; Lanfine, Lightwoods Hill, Warley, Birmingham. Thomas Lumsden Taylor, 212, Bath Street, Glasgow; 57, Kersland Street, Hillhead, Glasgow. As Associates (20):—Leslie Patrick Abercrombie, M.A., Liverpool, Liberty Buildings, School Lane, Liverpool; 18, Village Road, Oxtou, Birkenhead. Thomas Henry Barrow, 100, Shenley Road, Camberwell, S.E. Habib Basta, A.M.Inst. C.E., A.M.I.Mech.E., 11, Gray's Inn Place, W.C.; Strand Palace Hotel, W.C. Naserwanji Mancherji Merwanji Bhowanagare, 1, Gordon Place, Gordon Square, W.C. Edwin Forbes Bothwell, care of Messrs. Palmer and Turner, architects, Hong Kong, China. David Arthur Carmichael, Nether-ton, Greenock. William Robert Davison, Longhirst Brooks, Morpeth. George Eric Francis (Ashpitel prizeman, 1914), County Hall, Spring Gardens, S.W.; 115, Newlands Park, Sydenham, S.E. Thomas George, 1, Okus Road, Swindon, Wilts. Blakeley Rinder Gribbon, 16, Park Place, Leeds; Windsor Terrace, Garforth, near Leeds. Trevellyn Philip Jenkins, 276, Oxford Street, Swansea; Heathfield Villa, Heathfield, Swansea. Henry Norman Jepson, Borough Engineer's Office, Kingston-on-Thames; 13, Chatham Road, Kingston-on-Thames. Eger-ton Alwyn Lower Martyn, Brynhyfryd, Albany Road, Redruth. Edward Meredith, Tyllwyd, Newbridge-on-Wye. Albert Henry Owen, H.M. Office of Works, 12, Queen Anne's Gate, S.W.; 71, Marlborough Road, Upper Holloway, N. Stanley George Soper, 11, New Court, Lincoln's Inn, W.C.; 50, Woodville Road, Golden's Green, N.W. James Osbert Thompson (distinction

in thesis), City Architect's Department, Town Hall, Sheffield; 26, Briar Road, Nether Edge, Sheffield. John Algernon Edmund Toone, Home Affairs Department, 151, Collins Street Melbourne; care of 35, Davis Street, Elsternwick, Melbourne, Australia. Harris Stephens Triscott, 19, Charing Cross Road, W.; 2, Iverson Road, Brondesbury, N.W. Charles Taylor Whiteley, P.A.S.I., care of Mr. Rhodes Calvert, 4, Forster Square, Bradford; 10, Hall Royd, Shipley, Yorks.

REMOVING STAINS FROM STONWORK.

In the first place, it cannot be insisted upon too strongly that no stone now accepted as a standard in the market contains within itself the elements of staining or discolouration. It may change its colour somewhat in weathering, but this will be in the way of a mellowing of tone, and will give no unsightly blotches. This is proved by the natural exposure of the rock in the quarry. Where there is staining in the walls of a building, it can safely be set down to faults in the setting, or to some cause extraneous to the stone itself.

The most prolific source of trouble, says a writer in "Stone," is, of course, the cement that is used in setting the stone. Ordinary Portland cement will badly stain almost any stone. Various so-called "non-staining cements" are widely heralded, but it is the universal experience of stonemasons that little dependence can be placed on these. In the old days, before cement was so widely used, architects rarely had to complain of staining. There are thousands of buildings that have stood for half a century or more that show only the kindly mellowing of time, save for the effect of smoke and dust incidental to city life.

Architects will specify very particularly that stone be set in cement mortar and think that they guard against all trouble if they require the back and sides of the stone to be coated with waterproof paint. Undoubtedly a good paint is much protection, but the difficulty is to coat the beds and joints of each stone clear to the face. A narrow strip left unpainted will permit the carrying of the discolouring moisture from the cement to the face of the stone by capillarity.

All of this trouble could be avoided if the architects would only insist that the stone be set entirely in lime mortar, made in the following proportions: one part lime and three parts sand. The lime to be thoroughly slaked and the sand well tempered; all mortar to lie in the pile at least twenty-four hours before using; all sand to be clean, coarse, and free from loam. If the most delicate stone is set in mortar as above, and the back of the stone plastered with the same mortar, it positively will not stain. There is another way in which stone may be stained—by the drippings from concrete floors or roofs. In such cases the discolouring moisture runs down the face of the stone, and no painting of the back or beds can afford any protection. The utmost care in superintending the construction is the only safeguard from this disfigurement.

Cement stains cannot be eradicated by any wash or other treatment. Fortunately, they are apt to bleach out in time under the influence of the sun and the weather. The architect and the owner alike are naturally greatly exercised when cement stains appear, and try to seek some immediate remedy. The only thing to do is to have patience and wait for the natural bleaching, which may take weeks or even months. The stone setter, anxious to leave a building in spick and span condition, may suggest that it be washed down with muriatic acid. This should never be permitted. The acid may take out some of the stains for the moment, but it burns the surface and eventually will discolour even those portions that escaped the original staining.

There was a time when scrubbing with wire brushes was permitted, but this has generally been discarded, since its bad effects have been recognised. It is impossible to use wire brushes without leaving a coating of iron on the surface of the stone, and this is bound to leave a worse stain than it corrects.

The sand blast is sometimes employed, but generally for old buildings that have become discoloured from smoke and soot. This method should always be discouraged. The sand strikes the stone with a tremendous impact. It destroys the "skin" which forms on the surface of the stone by deposition of mineral ingredients on the evaporation of the interstitial water. It also stuns the grains or crystals of the stone and tends to hasten the weathering.

The very best treatment of stone to remove smoke, soot, dirt, mortar, etc., is a simple washing. A recipe that is recommended by stonemasons of the widest experience is as follows: prepare a wash of soft water and about one and a-half bars of common laundry soap. Boil until the soap has been thoroughly dissolved. Add a fine, clean, gritty sand (white preferred) and mix to about the consistency of putty. While mixing add about five tablespoonfuls of ammonia to a bucket of water. With this preparation scrub the surface with a stiff scrubbing brush, wash down with a stream of water from a hose, and then go over it again with a scrubbing brush.

While any building may need a cleaning, a great deal of the staining could be avoided if more care were taken. While speaking of the evil effects from cement and the dripping of dirty water, there are other things to be guarded against. The rust from improperly protected iron or steel and the verdigris from copper or bronze sheathing have disfigured many a fine structure. The writer knows of one very costly building where the oil-saturated exhaust steam from hoisting engines was discharged directly against the façade. What wonder if this is permanently stained? Doubtless the architect is speculating as to the cause of the discoloration, and is inclined to blame the stone.

A SUNLIGHT CODE FOR TENEMENTS.

A new tenement law has been adopted by the Council of the city of Cleveland, the result of four years' study by the Chamber of Commerce and the Building Commission, which, it is believed by a writer in the *Ohio Architect*, will serve as an inspiration and a model for the code writers of other American cities in solving this difficult problem.

The new Cleveland code has come into existence after four years of consideration by the Committee on Household Conditions of the Cleveland Chamber of Commerce, in consultation with City Building Commissioner Virgil D. Allen.

This committee was composed of men like Mr. Paul Feiss, who is head of a model garment making establishment, to whose efficiency Miss Ida Tarbell has publicly referred; Mr. Virgil Marani, former Building Inspector of Cleveland, and Mr. Edgar A. Hahn, a lawyer, who gave valuable assistance in framing the original draft. Miss Mildred Chadsey, chief of the Bureau of Sanitation of the city, also rendered considerable aid in formulating the ordinance.

After the committee from the Chamber of Commerce had spent several years in the study of a housing code, dealing with tenements only, Building Commissioner Allen was called into the consultation and gave the matter a great amount of study and investigation. It was then prepared for council and introduced in the name of the Mayor. The ordinance was introduced and referred to a special council committee of five, which held a number of public meetings and listened to protests and arguments pro and con, on the subject for many weeks.

Then Commissioner Allen was called into executive assistance by the council, and after going over all of the objections filed by the public, the ordinance was referred again to him for revision and final preparation. A very large part of the code as originally prepared by the Cleveland Chamber remained unchanged, but to Commissioner Allen is due the credit of discovering and writing into the ordinance the sunlight feature.

In discussing the matter with the *Ohio Architect, Engineer and Builder*, Commissioner Allen said:

"The code as now passed differs from the

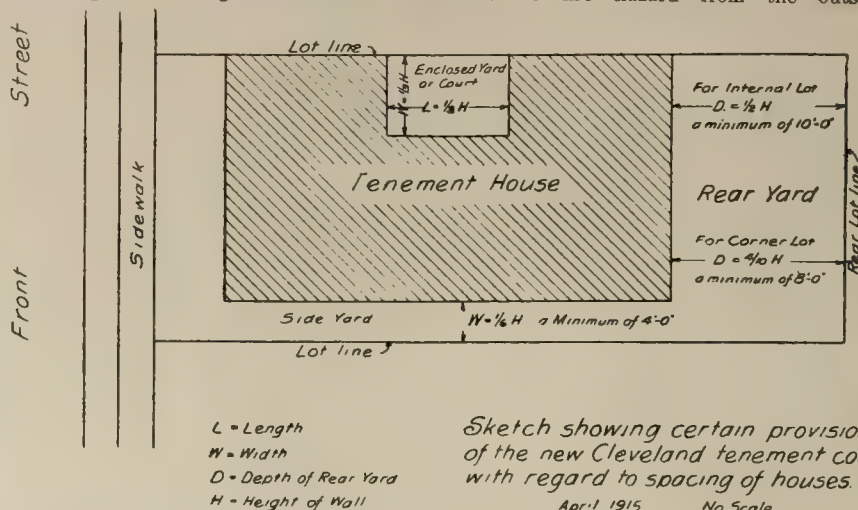
proposed draught in three essential points:

"First, we omitted practically all reference to stairways and stairway regulations, since we are attempting to write a complete stairway ordinance covering all grades of buildings for this city. It was therefore deemed unwise to incorporate any provisions on that subject in this code in view of the changes to follow in the near future.

"Second came the question of defining the terms of 'courts' and 'yards,' which we found have been used so indiscriminately in the building and housing codes which we con-

courts has been drawn, and I believe it should be adopted by all code writers hereafter, since it makes the definition perfectly clear.

"Third, having thus arrived at a definition, the next point was to determine the proper size of courts and yards in relation to tenement structures. It occurred to me, in endeavouring to arrive at a solution to this somewhat vexed problem, that there were three important points to consider, viz., light, ventilation, and fire protection. It is obvious that if there are no openings in a wall you have no fire hazard from the outside.



sulted. So far as many of the codes now in existence are concerned, they are so worded that a court is a court when it is not a yard, and a yard is a yard when it is not a court, there being no clear line of demarcation between the two kinds of open spaces.

"To get a proper definition, for the Cleveland code, of these two terms, we decided that the word "yard" should apply to any open space in conjunction with a tenement house which starts from the ground or grade level and extends clear and unobstructed to the

The question of fire therefore became incidental to that of light and ventilation, and as I regarded it, granted that if the proper light and ventilation were provided, the fire risk would be reasonably and fairly taken care of.

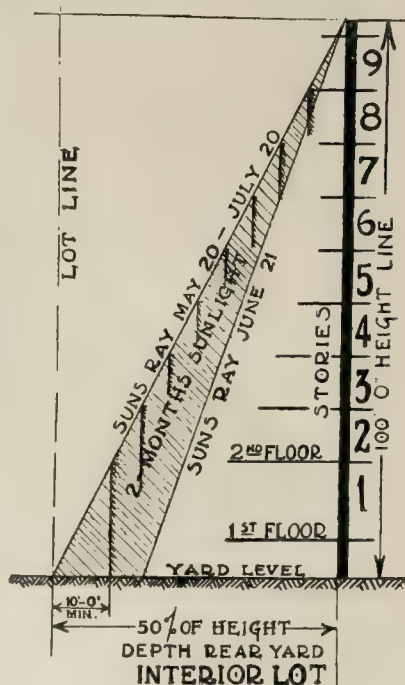
"Then came the question of determining the size of courts and yards. I was soon convinced that light was the determining factor, and very naturally I looked to the source of our light, the sun, as a guide. I found that in the latitude of Cleveland the sun is 71deg. above the horizon at noon on June 21—the longest day of the year—and it seemed to me that the sun's rays should reach the bottom of any court or yard at the far side of such opening at least one minute out of the entire year, that being the least direct sunlight such open space could have. Any width less would naturally give only a refracted light to a court or yard. I therefore used this as the minimum.

"The old rules had always been to provide courts and yards first according to the number of stories in height of the building, and second by the length or depth of the lot. It was obvious to my mind, however, that it is the height of the wall which casts the shadow and not the number of the sub-divisions back of the wall. Therefore, it seemed immaterial whether a wall, which is 100ft. high, is divided into one or twenty stories, it casts exactly the same shadow along its outside. I therefore decided to make the width of the courts a function of the height of the wall; that function to be the tangent of the angle between the sun's rays and the vertical or 19deg. This tangent is .34+.

"It was afterwards determined to slightly modify this rule to make this function exactly one-third of the height of the wall, which is so small a variation from the true angle as to be negligible. The length of a court we arbitrarily placed at one and one-half times its width, which works out to be one-half of the height of the wall.

"Where a passage-way is provided at the side of a building from the front of the building to the yard in the rear, we made that one-half the width of the court or yard as above determined. This was done on the ground that while we lost the sunlight, we had the free circulation of air through this space, it being open both at the front and rear, whereas the other type of courts may be entirely surrounded by walls and the circulation of air therein is consequently much poorer. This made the width of the yards at the sides of a building one-sixth the height of the adjoining wall.

"This covers all courts and yards sur-



sky. A court, on the other hand, is defined as an open space starting either from a point below the grade, as in cases when it is used to give light and ventilation to a basement, or at the top of a first or other story of a building, when intended to give light to the upper stories only, and extending clear and unobstructed to the sky.

"You will see from this that the definition of an open space does not depend upon its relation to the building, but is determined by the place from which it starts at the bottom. So far as I know, this is the first time that this distinction between yards and

rounded, or partially surrounded, by walls of a building.

"For rear yards, on interior lots, the direct rays of the sun are allowed to shine into the yard for at least two months of the year, which made the depth 50 per cent. of the height of the nearest adjacent wall, with a minimum of 10ft.

"For corner lots, the depth of the yard is made .40 of the height of the wall, with a minimum of 8ft.

"These rules, we believe, are the simplest yet written and give every advantage to the designer who is careful in the arrangement of his building both vertically and horizontally on his lot.

"The theory will apply to all cities, irrespective of their latitude, since if they are farther north where they will get more sunlight, their courts and yards will be wider, and if farther south where they will get more sunlight, the courts and yards will be correspondingly smaller.

"In these rules all reference to the size of lots and number of stories in a building has been eliminated, and an irreducible minimum has been established for courts and yards, which is that where the width is one-third of the height of the wall, the minimum is six feet, which is about equivalent to that required, for a two-story building, where a width of one-sixth of the height of the wall is required, the minimum is 4ft., and is as small a passageway as would be useful for firemen when passing from front to rear with fire extinguishing apparatus. The minimum width of rear yards on interior lots is 10ft., and approximately the same yard required for a two-story wall the same dimensions for yards on corner lots is 8ft.

"You will see by this that we were striving to have a housing code rather than a construction code. Our real idea was sociological rather than architectural. Do not think, however, that I am enamoured of tenements—rather I would prefer to see Cleveland a city of residences. There is only one way to solve the housing question properly, and that is by solving the economic question underlying it, and see to it that the land of our cities is used and not abused. We must solve the land question first, and the way to do that is to fine the owner for letting his land stand idle—in other words, adopt the Single Tax."

The code, which became effective June 1, will, it is believed, prevent the existence in Cleveland of congested districts, which are the bane of so many municipalities. Particular interest centres, however, in the adoption of the sun's angle as an absolute factor in determining size of the "courts" and "yards" for tenements.

The accompanying sketches will illustrate Mr. Allen's daylight theory for tenement courts and yards.

At Walthamstow on Monday Mr. F. H. Tulloch, an inspector under the Local Government Board, held an inquiry into an application from the urban district council for sanction to borrow £4,300 for the purchase of land on which to build a depot.

Mr. W. O. E. Meade-King, an inspector from the Local Government Board, held an inquiry at Cirencester on Thursday last into an application from the urban district council for sanction to borrow £1,200 for the purchase of land for street improvements.

At the last meeting of the corporation of Bootle the Finance Committee recommended the postponement till after the War of internal alterations to the town hall, for the better accommodation of the borough treasurer, the estimated cost being £450. An amendment directing the work to be carried out forthwith was, however, carried by nineteen votes to twelve.

Kidderminster Town Council have instructed the town clerk to apply to the Local Government Board for sanction to borrow £5,000 for the sewerage of the added areas in the extended borough. The work will form part of a large scheme of sewerage and sewage disposal, which has been approved by the Local Government Board, and the estimated cost of which is £31,000, but the greater work will not be carried out till after the War. The work now proposed to be put in hand is urgent.

OBITUARY.

We regret to hear of the death of Second-Lieutenant Thomas A. D. Deane, Royal Marine Light Infantry, son of Sir Thomas M. Deane, A.R.H.A., of Molesworth Street, Dublin. Lieutenant Deane was recently killed in action in the Dardanelles. A letter of sympathy in his bereavement has been received by Sir Thomas Deane from the King and Queen.

As we briefly announced in our last issue, Mr. Charles Edward Mallows, F.R.I.B.A., of 28, Conduit Street, Hanover Square, and Bedford, was found dead in his bath at the residence he had built from his own plans at Biddenham, near Bedford, on the morning of Thursday in last week. By his sudden decease from heart failure, a genial man, an accomplished draughtsman, and a clever planner has passed away. Mr. Mallows was in his fifty-second year, and was the second son of George Henry Mallows, of Bedford. He was articled in 1879 to Mr. F. T. Mercer, of Bedford, and on the expiration of his pupilage became a student at the Royal Academy Schools, where he gained a silver medal. He was afterwards successively an assistant in the offices of Mr. H. H. Bridgman, Messrs. Salomons and Wernham, and Messrs. Wallace and Flockton. His golden opportunity for intimate knowledge of mediæval architecture and the perfecting of his draughtsmanship came in 1886, when he was engaged by the proprietors of the *Century Magazine* to visit any localities in England containing picturesque buildings and sketch and describe them. This carte-blanche commission was renewed in the summers of 1887, 1888, and 1889, with the happiest results to readers, proprietors, and artist. In 1889, the year in which he commenced independent practice in London, Mr. Mallows won the Pugin Studentship with a brilliant set of drawings. The following year he joined the Royal Institute of British Architects as a Fellow, and was elected upon the Council of that body in 1904, and again in 1906, 1907, 1908, and 1909. At the council-table his strong opinions carried the more weight from the pleasant and conciliatory manner in which his views were expressed. For some years he was in partnership with Mr. Grocock, at Gray's Inn and in Bedford. Amongst the appointments he held was that of diocesan surveyor for Ely. In collaboration with Mr. A. W. S. Cross he submitted competitive designs for the municipal buildings at Glasgow, the Birmingham Art Gallery (1907), and the Wesleyan Centenary Hall, Westminster (1909), and conjointly with Messrs. Russell and Cooper he competed for the Town Hall Extension and Law Courts, Hull. He won the first premium for the new municipal buildings at Coventry, was a competitor for the Pitfield Street Library and Baths, Shoreditch, and for the Acton Municipal Buildings, and was called in by the corporation of Bournemouth to prepare a scheme for municipal buildings. The first design, a very effective proposal, was regarded as too costly; but in association with Mr. F. W. Lacey, the borough engineer, Mr. Mallows submitted a smaller scheme, which has been carried out. In Cranfield Church, Beds, he put up a delightful rood-screen, based on some scanty remains of Late Tudor and Early Renaissance character; it was illustrated in our issue of July 5, 1901. Other buildings carried out by him were a village hall and institute at Nettlebed (illustrated by us September 13, 1891), lodge and post-office, Checkendon; Dalham Hall, Suffolk; additions to Canons Park, Tirlleigh Court, Cheshire; Craig-y-Parc, Pentrych, near Cardiff (illustrated September, 19, 1913); pergola and gardens at Courtlands (in conjunction with Mr. T. H. Mawson); another pergola and gardens (given by us, September 27, 1912); a charming house at Pulborough, Sussex, for Canon and Mrs. Nairne; Joyce Grove, near Nettlebed; houses at Bedford, Crowcombe, Sunningdale; and a clock-tower and campanile, St. Michael's College, Tenbury. His drawings and sketches were to be seen nearly every year in the Architectural Room at the Royal Academy, and among those reproduced in

our pages were the church of St. Salvi and a Renaissance Courtyard at Albi (February 1, 1895), eight pencilled interiors of Gloucester Cathedral, Tewkesbury Abbey (August 16, 1895); the south transept interior, and entrance to Vicars' Close, Wells Cathedral (August 10, 1894); the Vicars' Close from Cathedral roof, Wells (July 19, 1889); entrance doorway, Wells Chapter-House, exterior and interior; Cleeve Abbey refectory and south side of Minehead Church (April, 1891); interior of choir and entrance to Chapter-House, Wells (August 17, 1894); Evercreech church tower (August 10, 1894); the main façade of the Palazzo Pandolfi, Florence (March 9, 1888); and the interior of Chartres Cathedral (February 7, 1896). One of his early drawings was made for Sir Aston Webb, and showed the new porch to the church of St. Bartholomew the Great, West Smithfield. In conjunction with Mr. T. H. Mawson, Mr. Mallows devised many garden and other schemes, one of which, for the restoration of the moat, lodge, and gatehouse at Hampton Court Palace, was hung at Burlington House in 1910. He took a deep interest in the improvement of London, and prepared an attractive design for the treatment of the riverside on the south of the Thames, which was shown at the Academy three years ago. Mr. Mallows married in 1899 Sybil Lucy, second daughter of Mr. and Mrs. H. I. Peacock, of Biddenham, who, with a son and daughter, survives him. A view of the house and garden he planned for Mr. and Mrs. Peacock was published by us on August 2, 1901. Of late years Mr. Mallows' health had not been good, and he had a serious breakdown two or three years ago, from which he seemed to have fully recovered.

Mr. Thomas Surman, Bristol Road, Edgbaston, retired builder, whose death took place on February 12, left property sworn at £15,068, with net personality £14,918.

Mr. H. C. Crothall, an architect to the County Council of Middlesex, has received instructions from the county council to prepare plans for the proposed new asylum at Heston.

Mr. G. H. Webb, assistant to Mr. Uren, the surveyor to the Aldershot Urban District Council, having almost completed the supervision of the scheme of sewerage reconstruction, has obtained leave to join the colours.

The Stratford-on-Avon Rural District Council have granted Mr. J. Brock, their sanitary surveyor, an honorarium of £40 for the extra services rendered in connection with various sewerage undertakings, and also reimbursed him the costs to which he has been put in obtaining clerical assistance and the provision of office accommodation.

The recreation hut which has been provided at the 4th Northern General Hospital on the Wragby Road at Lincoln by means of private subscriptions was opened by Earl Brownlow, the Lord-Lieutenant of the County, on Tuesday afternoon. The hut, which has been erected at a cost of over £700, is for the use of convalescent patients. It was designed by Mr. H. G. Gamble, A.R.I.B.A., of Lincoln, and Messrs. Halkes Brothers were the builders.

A small loan collection of water-colours has just been hung at the Whitworth Institute Art Gallery, Manchester. These fine pictures—nearly all of them landscapes or of architectural subjects—are by Mr. Herbert J. Finn. The most effective are those in which the lights are wiped or brushed out of the darker tones. They include illustrations of "Edinburgh from Calton Hill," "Cannon Street Station," "Pall Mall East," "Plymouth Sound," and "Oxford from the Sheldonian Roof."

The correspondent of the Commercial Intelligence Branch of the Board of Trade in Hong Kong (Mr. E. A. M. Williams) reports that an opening exists in that colony for the supply of asbestos of really good quality for shipbuilding and roofing purposes. United Kingdom manufacturers and exporters of asbestos materials may obtain the names of two firms in Hong Kong who might be willing to take up agencies on their behalf, on application to the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, London, E.C.

MUNICIPAL AND COUNTY ENGINEERS' CONFERENCE AT AYR.

The annual conference of the Institution of Municipal and County Engineers was held on Friday and Saturday in the County Buildings, Ayr. At the opening meeting, held on Friday morning in the County Hall, there was a large attendance. Mr. J. S. Pickering, M.Inst.C.E., Cheltenham, president, occupied the chair.

TOWN PLANNING DETAILS.

Mr. John Bryce, M.Inst.C.E., Office of Public Works, Glasgow, read a paper on "Suggested Town Planning Details for Scottish Conditions," and dealt with the kind of houses, their precincts, and open spaces. He pointed out that, taking the Glasgow building regulations as a basis, the approximate number of dwellings of two rooms it was possible to erect was, in two-story buildings, 45; three-story buildings, 65; four-story buildings 84. Mr. Bryce was of opinion that the proportion should be, for two-story tenements 26 per acre, for three-story tenements 33 per acre, and for four-story houses 37 per acre. The building line should be 70ft. apart, except in the case of public buildings; width of carriage way, including footways, 40ft., anything above 40ft. to be provided by authority. Streets exceeding 60ft. in width should have the land in excess of 60ft. calculated in computing area of open spaces. He was of opinion that no single-apartment houses should be built, and that two-apartment houses should be discouraged.

ECONOMIES IN HOUSE CONSTRUCTION.

Mr. William A. Macartney, A.M.Inst.C.E., Johnstone, submitted a paper on "Possible Economies in Scottish House Construction." When international and industrial conditions were restored to their normal again, one of the most pressing problems which local authorities would require to face would be that of housing. In the official report of the Local Government Board, 1913, it had been stated that repeated instances of house-famine and consequent overcrowding, due to the development of the coal industry in Central Scotland, had come under the notice of the Board. The introduction or revival of coal industry in any part brought in its train large numbers of miners, who had to be housed. The result was that existing houses were crowded to their utmost capacity, and houses that had become derelict had been pressed into service wherever possible. The colliery companies maintained that they had no duty to provide those houses. Private enterprise showed little signs of meeting the situation, owing to the increase in costs and the small rent paid by the miner. There remained the alternative of the local authority providing the necessary houses. It was, then, an indisputable fact that private enterprise, so long depended on, had within recent years failed. Authorities generally were now waiting a lead on modern lines and on a comprehensive scale, and surely that would not be much longer delayed. Municipalities were being asked to take up housing because private enterprise had failed to keep pace with local demands. It was suggested that local authorities should take up a more advanced position and drop this apology for its housing schemes. It had been said that private enterprise was better able to build houses than a public authority, and this idea had been dinned into their heads for so long that it was accepted without hesitation or qualification. It might be held to be true that private enterprise must also be better able to build waterworks, gasworks, tramways, washhouses, and a score of other recognised factors in modern communal life. In this climate a substantial and healthy shelter of some kind was one of the necessities of life, and it was putting the cart before the horse to provide water, gas, sewers, and roads, and put the onus on others to provide the house. In the past property had been looked on as a sort of gilt-edged security. Now, for various reasons, property was not so favoured by moneylenders. Local authorities could borrow money more cheaply than a private individual, and for housing

schemes the Government offered local authorities money on very reasonable terms. Municipal housing consisted of two distinct sections—viz., rehousing and new housing. It was easy to shut up houses that had become uninhabitable; but unless provision was made for the people dispossessed, they would possibly move into other dwellings in the same district, perhaps already inhabited, and cause more overcrowding and worse conditions than those they had left. The city of Liverpool furnished good concrete examples of rehousing the poorer classes. Up to the end of 1913 Liverpool had spent £1,135,000 on demolition and housing, the net charge to the ratepayers on the whole outlay, since 1864, having been £37,000 per annum. A good example of new housing was to be seen in the Middle Ward of Lanarkshire, where 150 houses of the self-contained order were being erected for miners by the District Committee. Each house of the dominant type was equipped with a bathroom, scullery, pantry, coal store, and living-room downstairs, and two or three bedrooms upstairs. While the rents would be within the reach of the workers, the scheme would be self-supporting. The opinion of the author of the paper was that, while schemes of rehousing might cost more than would be recovered from the tenants by way of rent, there was no reason why, with careful consideration of ways and means, new housing should not be on an economic basis, and this without increasing the rent. Such a result required that local authorities, and particularly their surveyors, be prepared to study the subject of building construction with minds free from bias which tradition and custom engendered. Coming to the type of house to be put up, the author said it was the fashion to decry the tenement dwelling, and to say that working men wanted cottages. The mass of the people needed to be educated up to the cottage type of house. The tenement was not wholly evil, and when well planned and constructed had a number of advantages over all other types. He submitted as suggestions for more economical construction of municipal houses (1) that it was necessary to proceed with municipal housing schemes in many districts to-day; (2) that to do so successfully some modifications of existing building practice and regulations were called for; (3) that even though these modifications render the building less substantial than had been the case heretofore, so long as the life of the building exceeded the period allowed for repayment of the loan, that should be considered sufficient. Unless in exceptional circumstances the best terms would be obtained from the Public Works Loan Commissioners, and their general conditions that the cost of the building must be repaid in 60 years and the cost of the land in 80 years, could not be taken exception to.

Discussion took place on both papers conjointly.

CLEANING OF WATER MAINS.

Mr. James M'Fadzean, B.Sc., M.Inst.C.E., Ayr, contributed a paper on "Pressure Scraping of Fifteen Miles of Water Mains."

Mr. R. Drummond, County Road Surveyor, Renfrewshire, read a paper on the "Practice of Road Work."

Mr. Allan Stevenson (vice-president), County Road Surveyor, Ayr, read a paper on "Description of Experimental Stretches of Road Laid in Ayr District, with Notes on Meteorological Station in Connection Therewith." The paper dealt with nine methods of treating roads with tar-macadam or allied process and one with rocmac. The experiments were still in progress, and incomplete so far as the results were concerned.

HEAVY MOTOR TRAFFIC.

At one o'clock there was a reception by the Ayr County Road Board and the Town Council of Ayr, and luncheon was provided by the County Council in the Lesser County Hall.

Mr. W. D. Russell, of Maulside, Convener of the County, presided, and welcomed the engineers to Ayr. Dealing with the question of heavy motor traffic, Mr. Russell said he hoped and trusted that means might be found whereby those who used the heavy motors

would be compelled to contribute justly and fairly and adequately to the cost of maintaining those roads which they did so much to destroy. He also thought they would agree that they did not get the grants towards the expenditure on roads which they should get from the Road Board in London. When these grants were given they were so fenced round with conditions and stipulations that really, in some cases, it was almost considered unnecessary to ask for them. It had always been understood that the proceeds of the petrol tax were to be devoted to the maintenance and upkeep of their roads. If the Road Board really treated them as honest men, and gave them the money to spend as they thought best to improve the roads, the results would be much better and they would work much more smoothly.

Mr. J. S. Pickering, the president, returned thanks.

Late in the afternoon, on the invitation of the Provost, Magistrates and Town Council of Ayr, a number of the delegates visited some of the municipal works in the town, while others went sightseeing to the Burns Monument and Cottage.

In the evening the annual dinner was held in the Station Hotel.

On Saturday experimental stretches of road and meteorological stations in Ayr district were visited, and in the afternoon a circular tour was made by motor char-a-banc to Loch Doon and Ness Glen.

PROFESSIONAL AND TRADE SOCIETIES.

ULSTER SOCIETY OF ARCHITECTS.

—The May general meeting of this society was held on the 31st ult., at 9, Howard Street, Belfast. The chair was occupied by the President, Mr. N. Fitzsimons, F.R.I.B.A. Among other matters under discussion was the old grievance from which architects in private practice have suffered so long, and regarding which so many representations have had to be made in the past—the practice of County and District surveyors and their assistants engaging in private practice while in receipt of public salaries in competition with qualified architects. A number of instances were brought forward and discussed by Messrs. R. M. Young, J. P. McGrath, R. E. Buchanan, T. Johnson. On the motion of Mr. W. J. Gilliland, seconded by Mr. H. Seaver, B.E., the following resolution was passed unanimously: "That the attention of all the public boards in Ulster be called to the practice prevalent of public officials, in receipt of salaries payable out of the rates, engaging in competition for private practice with qualified architects, more especially at the present time when there is so little work of a private nature for architects whose living depends on their practice. That a resolution passed on this matter by the Society on December 18, 1905, be reprinted and a copy sent to each of the public boards in Ulster."

It was reported to the Foleshill Rural District Council on Friday that forty houses were in course of erection at Bodworth and Foleshill, that five streets were being laid out, that four public-houses were being rebuilt, and that twenty-seven workmen's dwellings were being built by the council.

Second Lieutenant T. E. Turner, of London, a Student of the Society of Architects since 1912, and a Member of the Beaux Arts Atelier, has been killed in the fight at Aubers Ridge. Mr. Turner joined the 15th (Reserve) Battalion of the London Regiment on the outbreak of the war as a second lieutenant, and in a letter to the secretary of the Society of Architects expressed the hope that he would rejoin "when this unhappy business is over."

The Dublin Port and Docks Board discussed at their last meeting a joint report of the harbour master and the engineer, recommending the construction of a spur jetty 300 feet long and 80 feet wide, at an estimated cost of £15,000. A committee of the whole Board advised the postponement of the consideration of the matter for twelve months. To this move an amendment was that the report of the engineer and harbour master be adopted, the work to be begun at the conclusion of the war, but the amendment was rejected by twelve votes against nine.

Currente Calamo.

Very late in the day the R.I.B.A. has taken second thought and expelled all German and Austrian members from its ranks. We took it for granted that this would have been done at the meeting on January 4 last; and were never more surprised than when by the bare casting vote by the chairman, Mr. Max Clarke's resolution was shelved. That it should have taken nearly six months' experience of the murderous atrocities perpetrated by Germans to convince the R.I.B.A. that their fellow-countrymen are no longer fit to associate with any decent men of any nation or calling is to be deplored, but now that the right thing has been done, let all concerned see to it that never again are the ignominiously expelled members re-admitted, or any others of their race permitted to enter our ranks.

Most people, we think—certainly those who have seen the German caricatures of some of them in their comic prints—will agree with Sir Leo Chiozza Money that it is a pity that more discretion is not available at the official recruiting office as regards the preparation and issue of some of the recruiting placards. Such specimens as "Is Your Best Boy in Khaki?" "Enter now for the Great International Final," "Don't Lag, but Follow the Flag," etc., seem hardly the sort of appeals which should be made to, and are likely to be responded to, by the men we want at the front. This is a pity, because there are not a few which are in every way creditable, both as regards the sentiment embodied and the artistic ability with which it is rendered. In every man there is something of the best which responds to noble words, and is stirred up to translate them into noble acts, and there is no lack of those capable of advising the politicians in the right selection of such. This is surely one of the many instances of the truth of Mr. Spenser Wilkinson's caustic but true remark that what is most wanted just now by those who are governing us is knowledge—the particular sort of knowledge which they do not possess, because they have never paid its price. The price of knowledge of any given subject—and there is no knowledge except of given subjects—is the devotion of the best years of a man's life thereto. Our misfortune so far seems to have been the lack of recognition of this, and the consequent too frequent inability of our rulers to organise knowledge.

It is all very well to insure against the damage done by bombs, but the most liberal policy will not prevent injury or save life. What are wanted to-day, and what we all have to recognise will be wanted more and more in future wars, are bomb-proof roofs to buildings of all descriptions. The one material that, so far, affords any security is McNeill's slag wool, as made by Messrs. F. McNeill and Co., Ltd., the well-known Government contractors, of Bunhill Row, E.C., who have supplied it in very large quantities to the authorities. The vermin- and sound-proof qualities of this material are, of course, familiar to most of our readers, and its ready and successful application as a bomb-resister will therefore in very many cases render additional cost unnecessary. All interested in the preservation of property from this new danger, with which, we fear, we must make up our minds to familiarise ourselves for the future, will do well to obtain particulars of Messrs.

F. McNeill and Co. of the mode of application of their slag wool and secure protection from the attacks, against which no place in the three kingdoms can be considered immune while the war lasts, or when any subsequent war breaks out.

The pollution of the air of manufacturing towns is one of the most serious problems of the time, and the report of the Air Pollution Advisory Board of the city of Manchester will interest those seeking to mitigate the evil. The domestic grate, of course, is the principal offender and the modern factory with mechanical stokers is comparatively innocent. In many cases, however, the impurities are not due to indifferent stoking, and for these the electrostatic method of precipitation which has proved so successful in America is worth trial. The polluted air passes between electrodes maintained at difference of potential of 100,000 volts, and the particles of carbon, arsenic, potash, or chlorine are carried by the discharge to one of the electrodes. About five kilowatts are necessary to deal with about 30,000 cu. ft. of air per minute, so that the cost is slight. In many cases the value of the material recovered in a year is said to have exceeded the cost of installation and working of the apparatus.

At the recent district meeting of the Institution of Municipal and County Engineers at Northwich, some interesting particulars were given by Mr. J. Brooke, the engineer to the Town Council, of an unusual feature in the borough's building by-laws, which is well noticed by all concerned in districts similarly troubled. The council by-laws allow the erection of composite buildings, which are easily lifted or adjusted in case of subsidence. The composition is timber framing, filled in with brickwork. The walls of the rooms are in many cases lined with tongued and grooved matchboarding, nailed to the timber diagonally; this has been found wonderfully to strengthen the building, and thus more effectually resist the effects of subsidence. The modern method of assisting the timber structure is to lay the wooded sills in steel channels, securing the corners with plates.

For a long time the Chief Trade Instructor of the Canadian Dominion Penitentiary at Edmonton, Alberta, was sorely perplexed because of the way in which certain portions of the cement floors in the institution were wearing away. Restless convicts who were given to pacing to and fro in their cells wore deep depressions in the cement. In the corridors, too, the floors showed very noticeable wear after they had been used only a few months. Every time the floors were swept, large quantities of sand were gathered up, and the dust in cells and corridors was very obnoxious. The Chief Trade Instructor had superintended the mixing of the concrete and the laying of the floors; and he knew that the fault lay not in the quality of the cement. Try as he would, he could not account for its apparent softness. One day, not long ago, the Chief passed through the corridor of the main cell block when the convict cleaners were scrubbing the floors. He noticed that they used a very strong solution of creosote for cleansing and disinfecting, pouring the solution on very liberally and sweeping it ahead of them with their brooms. Suddenly it occurred to him that perhaps it was this creosote that was playing such havoc with his perfectly good

floors. He resolved to experiment, and made two plates, of the same proportion of sand and cement as was used for the floors. One of these he treated with creosote diluted in water, administering the mixture several times during the day with a brush. The other plate was left untouched. The following day he took up the two plates, and with his knife was able to scrape off large quantities of sand and cement from the surface of the plate that had been subjected to the creosote. In fact, it was so soft that one could make holes in it with a sharp stick. The other plate was, of course, hard and in perfect condition. Needless to say, the use of creosote as a cleanser and disinfectant for the cement floors and walls was abandoned immediately.

The Hampshire House Trust, an arts and handicrafts fellowship in Hammersmith, is holding an interesting exhibition of work done in its workshops by Belgians and English-trained men and apprentices. Some good work is shown in the women's department of embroidered lingerie. Some well-designed and attractive cottage furniture is shown by English workmen. But the most interesting things in the exhibition are the Belgian reproductions of old seventeenth-century furniture, copies of cabinets and chairs and tables that have perished in the old dwellings and halls of Ypres, Louvain, and Nieuport. These, which are to go back to liberated Belgium, are made to the design and under the supervision of two young Belgian architects, who have for years dealt with the work of old Flemish master craftsmen. Less artistic but quite as valuable is the work the Trust shortly hopes to undertake of building huts for repatriated Belgians. These are to be made after the design of Mr. Rowntree, approved by the Dutch authorities who are housing the Belgian refugees.

An attractive summer meeting programme has been drawn up by the Institution of Municipal and County Engineers for the gathering in London on June 24-26. The new president is Mr. H. T. Wakelam, M.Inst.C.E., the County Engineer of Middlesex, who will be formally installed at the Institution of Civil Engineers on Thursday, June 24, when eight papers will be discussed. Two visits will be paid: one to the new underground tube—the first State railway in this country—from the General Post Office to Paddington; the second to Southwark Bridge, which is now undergoing reconstruction. The work comprises the removal of old Southwark Bridge and the erection on the same site of a new bridge with improved gradients. The old bridge consisted of three cast-iron arches, the largest span being 240 ft. The bridge was designed by Rennie, and was opened to public traffic in 1819. The Corporation of London decided upon its removal on account of the steepness of its gradients—1 in 18 on the City side—and because its piers were out of alignment with the other bridges in the vicinity. The new bridge will consist of five steel arches, and the worst gradient is about 1 in 35. At the present stage the old bridge has been entirely removed, and the foundations for the new piers are in hand. Each of the new piers will be of stone, and will be founded on caissons sunk into the bed of the river. Each of the arches will be constructed with seven ribs, and upon these the steel flooring supporting the roadway and footpaths will be laid. The width between parapets will be 55 ft., the roadway being 35 ft. in width and the footpath 10 ft. The old bridge was 42 ft. 6 ins. wide.

Our Illustrations.

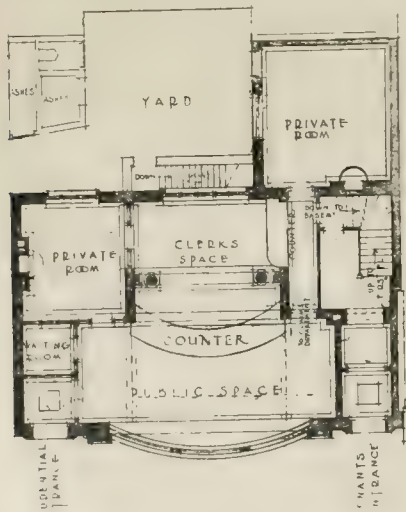
NEW PARLIAMENT BUILDINGS, OTTAWA.

This drawing of Mr. E. Vincent Harris's design is now on view in the Royal Academy Exhibition. The author considered the buildings to be placed on this site, with its commanding position overlooking the River Ottawa, should be simple in composition and big in scale. The finest prospect is from the river showing the Courts Building in the centre, jutting out on the natural promontory, flanked on either side by the Departmental Buildings. On the river side a wide terrace walk formed a feature in this plan, skirting the buildings with a loggia shelter set out axially on the Courts Building, it being thought this would be an interesting feature on the edge of the cliff, from which fine views of the surrounding country could be obtained, and that it would add scale to the main structure. The block plan helps to explain this lay out. The main face line of the existing Parliament Buildings fronting on Wellington Street was taken as the building line of the new blocks. By this means a greatly increased width was obtained for Wellington Street, which provided a fine setting for the buildings.

The entrances and staircases were so arranged that the varying levels of the site would not interfere with the simple lay out of the plan. The buildings were to be faced with Canadian stone, and the terrace walls were suggested to be built of rough rock-faced masonry obtained from the cliff side so as to marry into the landscape.

PRUDENTIAL ASSURANCE COMPANY'S OFFICES, STOCKTON-ON-TEES.

We give a plan and view of this block of buildings, now in course of erection on a site near the parish church at Stockton-on-Tees. The façade is purposely kept in harmony with the height of the adjoining premises and in accord with the colouring of the adjacent buildings. The stonework is relieved by red facings, red brick being much used in the town. The existence of some pro-



jecting windows in the previous building on the site allowed of the construction in advance of the frontage line of a large segmental bow, the curve of which dominates the planning of the office. The upper portion of the premises contains offices intended to be let. The principal contractors are Messrs. R. T. Smith and Son of Darlington, with Messrs. J. and J. Airey as sub-contractors for the mason work. The architect is Mr. Paul Waterhouse, and the building is being superintended under him by Messrs. Kitching and Lee, of Middlesbrough and Darlington.

CONVENT OF THE SISTERS OF BETHANY AT BOURNEMOUTH: THE NEW CHAPEL.

We give a double-page inset plate reproducing the elevations, sections, and plan of the

new chapel which completes the group of conventual buildings commenced by Mr. Norman Shaw, R.A., in 1873. The illustration gives a good general idea of the scheme, and the originals are now on view at the Royal Academy Exhibition. Brick and stone are used as in the rest of the buildings. A handsome feature is made of the rood loft singing-gallery. Cloisters are attached to the chapel, connecting it with the adjacent premises. Mr. Ernest Newton, A.R.A., P.R.I.B.A., is the architect.

CROW CLUMP, WEYBRIDGE.

This perspective of the south front of this house and garage, now building for Mr. T. P. Latham, is at present on view at the Exhibition of the Royal Academy. Messrs. Tubbs, Messer, and Poulter are the architects, and Mr. W. G. Tarrant, of Byfleet, is the builder. Plans of the building and a prospect of the house from the entrance side will be found in the BUILDING NEWS for July 10, last year, when the contract was commenced. The woodwork is in English oak, left its natural colour, and the roofs are covered with sand-faced, hand-made, rough and dark-coloured tiles. The interior is fitted up with hard woods, and for the reception rooms either in mahogany or oak. The drawing reproduced was made by Mr. B. A. Poulter. The gardens and grounds have been laid out by the architects. The work will be completed in about a month's time. The roofing tiles were made by Messrs. Warner, of Twyford. The ornamental plaster work was done by Mr. G. P. Bankart, and the mosaic by Messrs. Rust and Co.

SELECTED DESIGN: LIGHTBOWN COTTAGE HOMES, OWLETT HALL ROAD, DARWEN.

The architects whose design has been chosen for this housing scheme are Messrs. Sames and Green, of Darwen. The £10,000 left in 1910 by Alderman Timothy Lightbown will be spent in carrying out the buildings which will bear his name. The site for the Cottage Homes is on the southerly side of Owlett Hall Road, and the best use has been made of the aspect in arranging the grouping of the buildings. The homes are well set back from the road, with a common garden in front. Facing the centre of the buildings will be placed a sundial, with inscription setting out the donor's name. There will be eight homes, each of which will be self contained, and the accommodation consists of a living room, two bedrooms, scullery, store, and lavatories. The plan is well arranged and adapted for convenience of working, due caution being taken against draughts, while everything is under cover. The elevations, with a view to the character of the buildings, are not elaborate. The walls will be of stone, with brick lining on the inside. The roofs will be covered with Westmorland green slate, and the windows will be glazed with leaded lights, and have metal casements to open.

THE HEMEL HEMPSTEAD ISOLATION HOSPITAL.

This bird's-eye view gives a general idea of the distribution of the various buildings which have lately been finished and opened for use. Near the entrance is the Administrative Block, accommodating the matron, five nurses, and two domestic servants; a small room is also provided for the non-resident medical officer. It may be mentioned that no sitting or bedroom faces north unless additionally lighted from a sunny aspect; on the other hand, kitchen and sanitary offices, etc., face north, and thus secure a cool aspect. The matron's sitting and bedrooms command both the entrance roadway and the approach to the pavilions, thus securing effective control. The medical officer's room, although forming part of the building, is entirely cut off from other occupants and has its own separate entrance and sanitary accommodation. Room is allowed on the site for a possible extension of this block in a westerly direction for additional sleeping accommodation of four beds and the requisite proportional enlargement to the kitchen and other offices on the ground floor. The Laundry Block is placed with its axis running north and south,

to take advantage of the natural contours of the ground and avoid undue excavation, the mortuary being effectively screened from the patients, and the ambulance shed facing the entrance. Laundry machinery for hand power has been installed to comprise a complete unit, including a full-size steam disinfecter. The Scarlet Fever, Diphtheria, and Observation Blocks have been placed with their axis running north and south, and will thus receive all but the hot noonday sun. The accommodation provides for twenty-two beds, with duty room and sanitary accommodation in each block. These blocks allow extension of four beds to each block by simply lengthening the buildings. The separate dressing rooms adjoining the bath rooms in the two larger blocks provides a somewhat unusual method of discharge, and is intended to take the place of the usual discharge block, which it was not thought necessary in such a small hospital. Generally speaking, it is not claimed that this hospital does more than conform to the stereotyped design which has become almost universal. It is, however, in matters of general finish and other minor details that the designers hope to have evolved something superior to that which has obtained elsewhere, and it has been their endeavour to introduce some of the refinements of larger hospital design into a building of very economical construction. Particular mention in this direction may be made of the sanitary fittings generally, the specially designed door furniture, and the patent lead-covered glazing over the laundry affording continuous roof ventilation. The clerk of works was Mr. A. L. Cranstone, and the general foreman Mr. B. J. Biggs, and the building has been carried out by Messrs. C. Miskin and Sons, Limited, of St. Albans, under the superintendence of the architects, Messrs. John Saxon Snell and Stanley M. Spoor, of London, quantities being by Mr. A. R. Evans. The sub-contractors were as follows:—Laundry machinery, Messrs. Bradford and Co., of London. Disinfecting apparatus, Messrs. Manlove, Alliott and Co., of London and Nottingham. Sanitary apparatus, Messrs. A. Emanuel and Sons, of London. Door and window furniture, Messrs. Yannedis and Co., of London. Stoves and ranges, etc., The City Iron Co., London. Patent glazing, British Challenge Glazing Co., London. Entrance gates and fencing, Messrs. Rowland Bros., of Bletchley. Complete gas plant installed by Messrs. Cox in duplicate is provided for the purpose of supplying petrol air gas for the lighting of the various buildings.

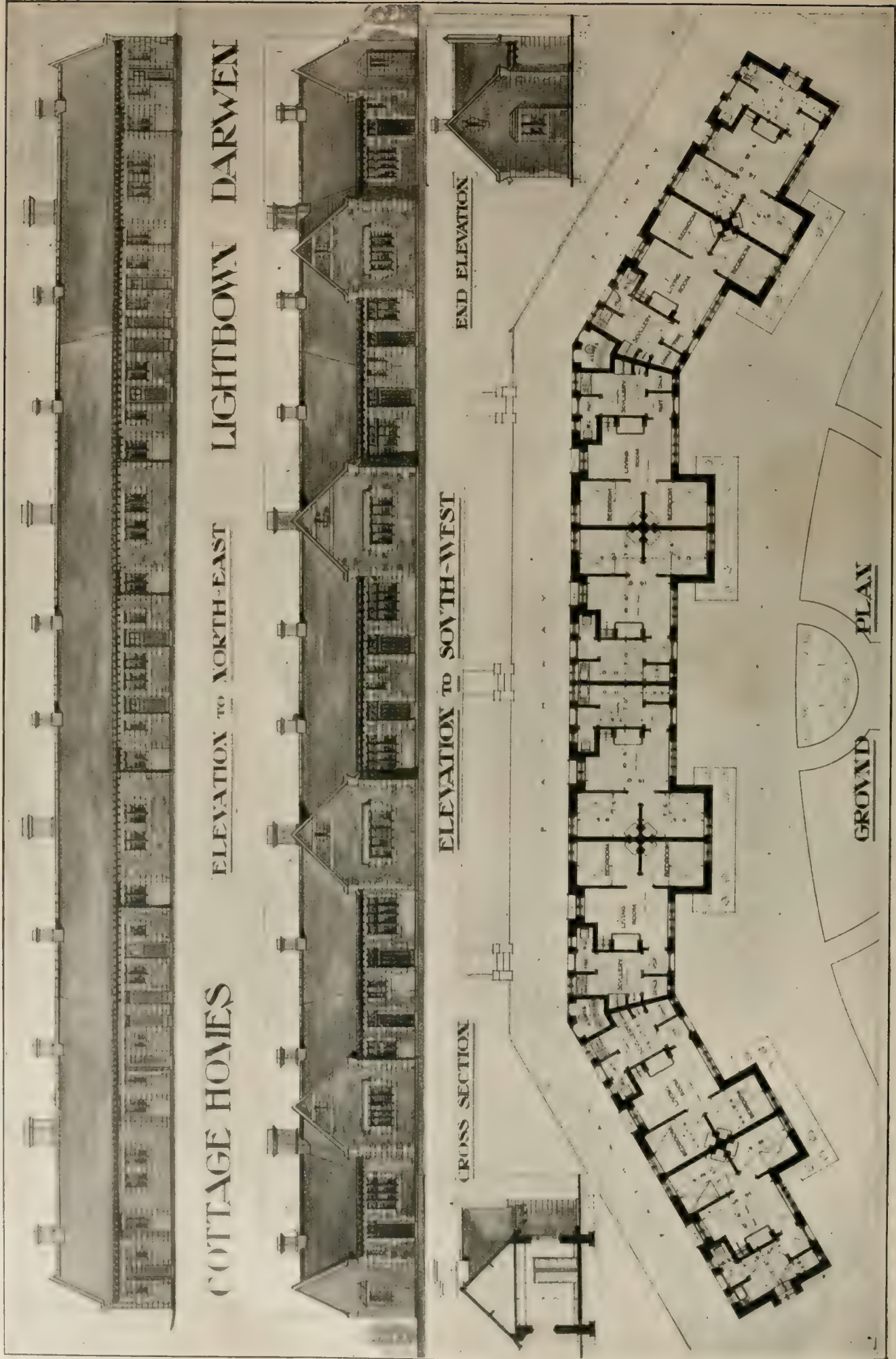
Mr. P. M. Gannon, of Navan, has been appointed assistant county surveyor for the Navan district of Westmeath at a salary of £100 per annum.

The Local Government Board have given their sanction to the city council of York to the borrowing of £30,681 for tramways and £5,530 for motor omnibuses.

The Hackney Borough Council have approved a scheme for a considerable widening on the eastern side of Kingsland Road, between Dalston Lane and Forest Road. The land will be given by the governors of St. Bartholomew's Hospital, with the consent of the Charity Commissioners.

At the last meeting of the Camborne Urban district Council a letter was received from the Local Government Board stating, in reference to the carrying out of the sewerage scheme, for which a loan was sanctioned on August 14, 1912, that they did not feel that they could properly sanction the raising of moneys for those works at the present time.

The Rev. J. W. Aytoun appeals for the small sum of £20 for the repair of the woodwork in Little Gidding Church, famous for its association with Nicholas Ferrar. He writes: "The imperative need at the present moment is the restoration of the oaken woodwork, which lines practically the walls and roofing of the whole interior. This is in such a state of decay (particularly the chancel) from want of attention and the ravages of the wood weevil that something must be done at once. The population of the parish consists of thirty-six persons, quite half of these being Dissenters."



SELECTED DESIGN LIGHTBOWN COTTAGE HOMES, OWLETT HALL ROAD, DARWEN.—Messrs. SAMES AND GREEN, Architects.



THE BUILDING NEWS, JUNE 9, 1915.



PRUDENTIAL INSURANCE COMPANY'S NEW BUILDING, STOCKTON-ON-TEES.—MR. PAUL WATERHOUSE, M.A., F.R.I.B.A., Architect.





THE NEW PARLIAMENT BUILDINGS, OTTAWA, C

JUNE 9, 1915.



—Design by MR. E. VINCENT HARRIS, F.R.I.B.A., Architect.

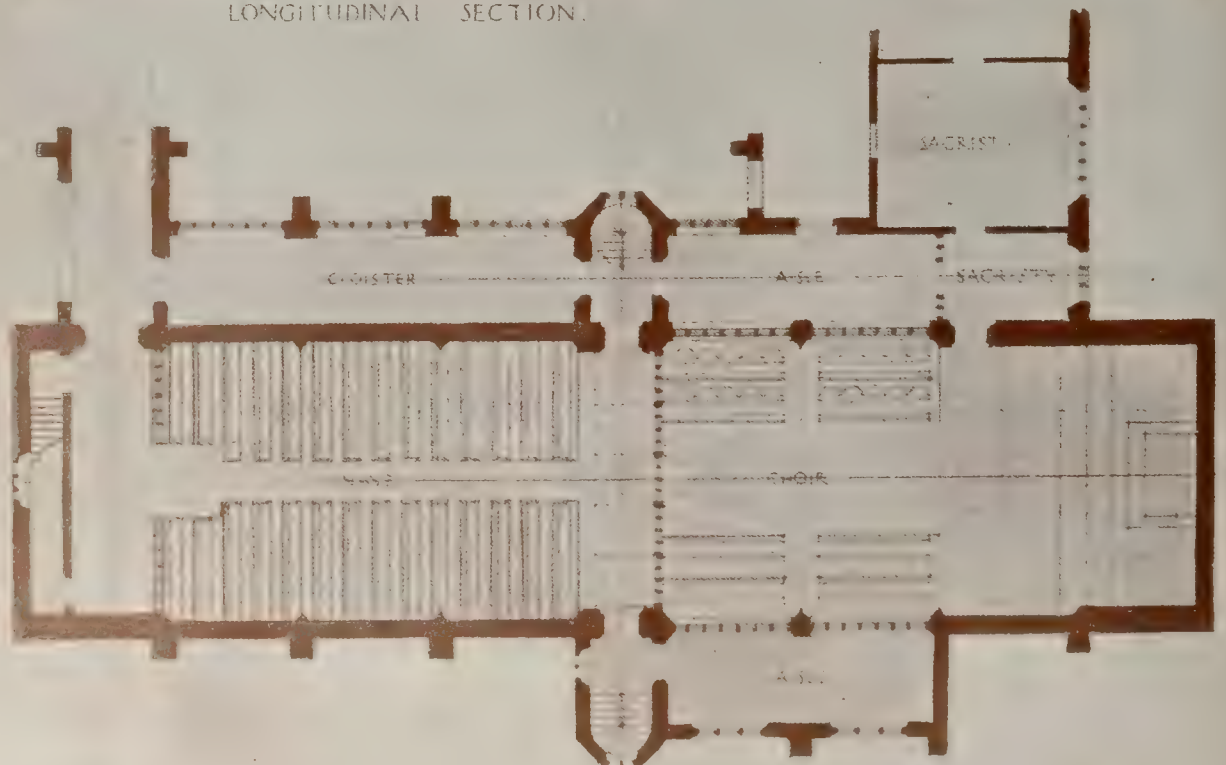




CONVENT OF THE SISTERS OF BETHANY SKETCHES FOR PROPOSED NEW



LONGITUDINAL SECTION.



N.

From Newton A.R.A. with
4 Raymore's Buildings

W.C.

Scale of Feet.

ST BOURNEMOUTH.
CHAPEL.



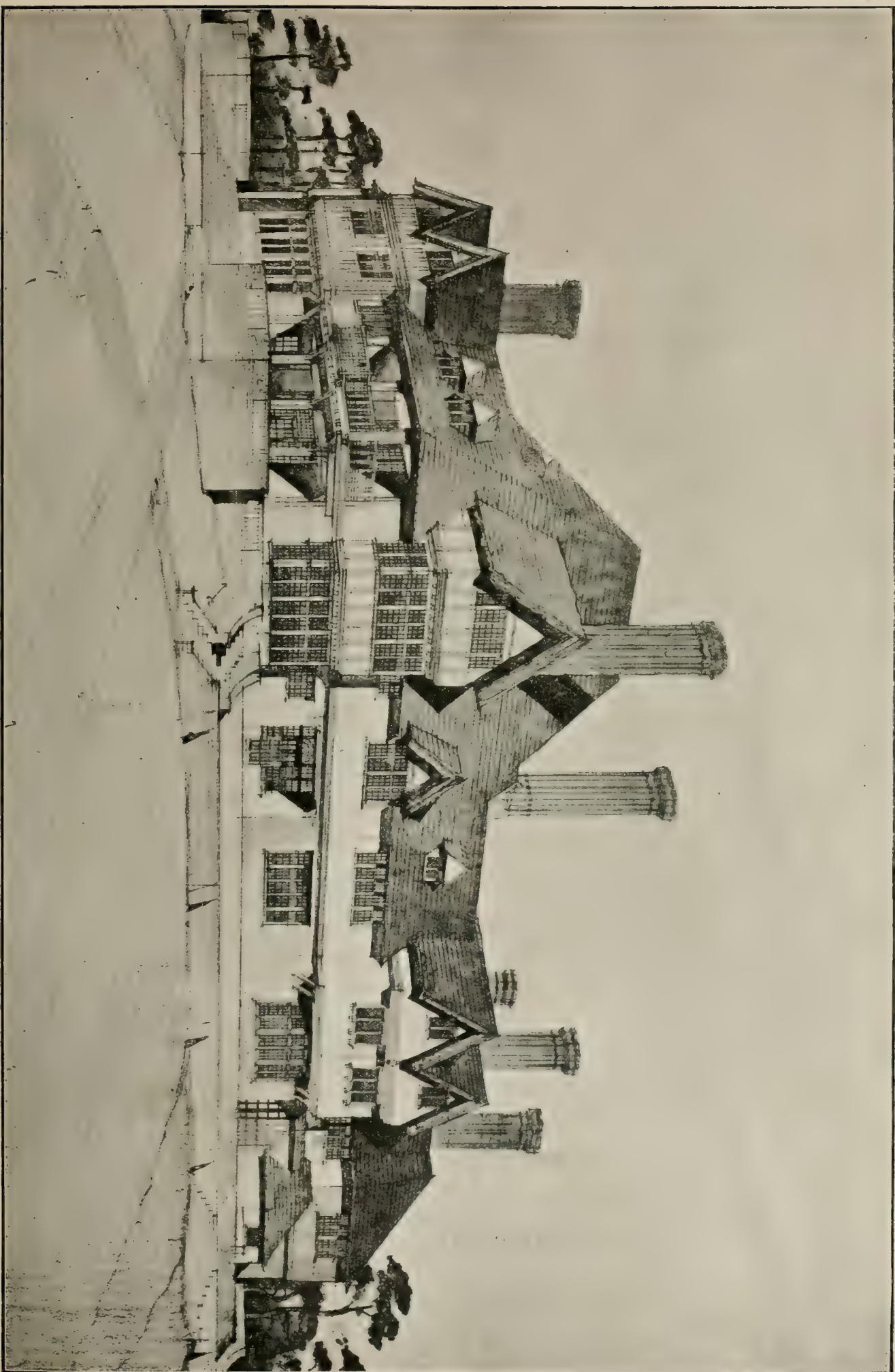
CROSS SECTION



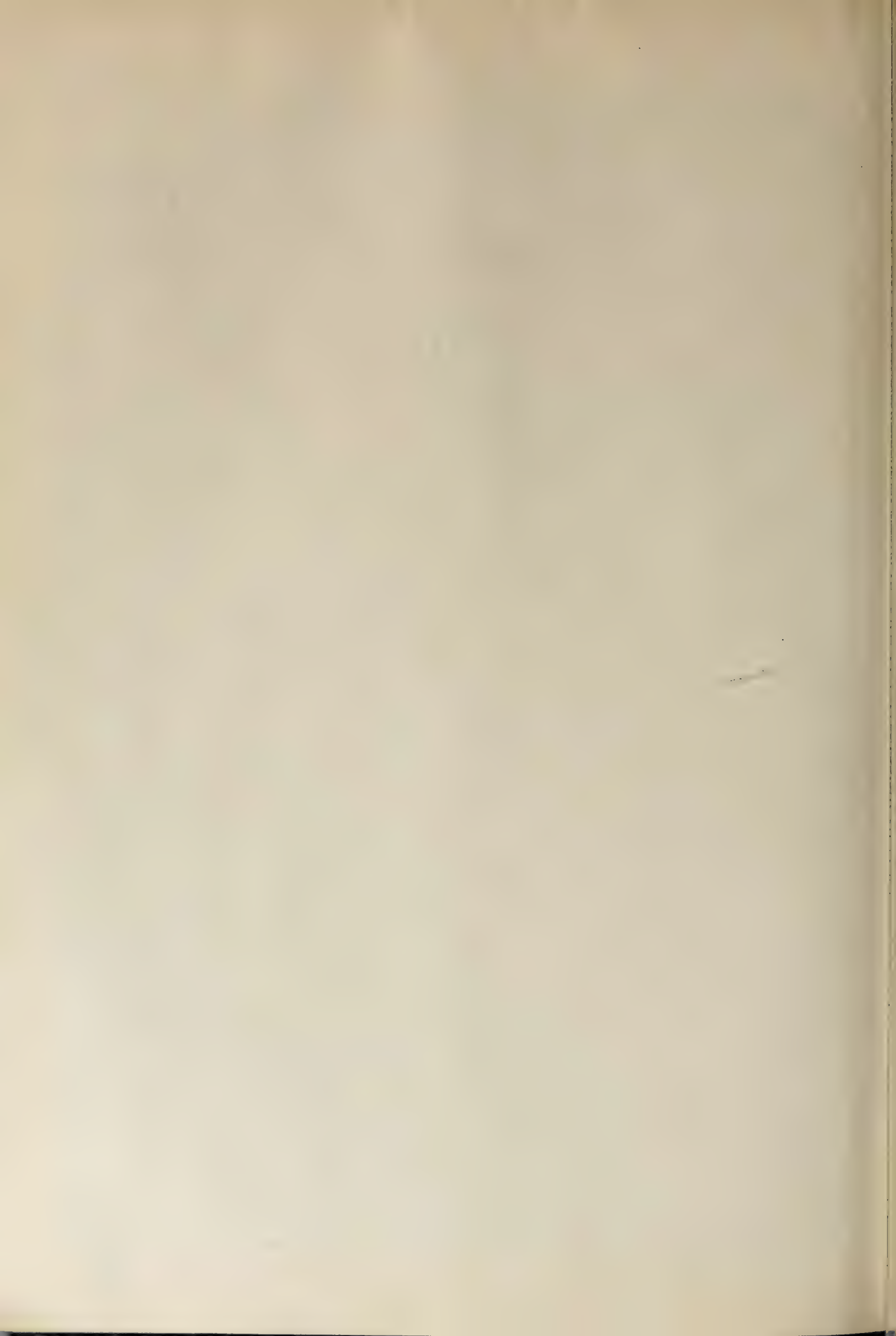
WEST ELEVATION



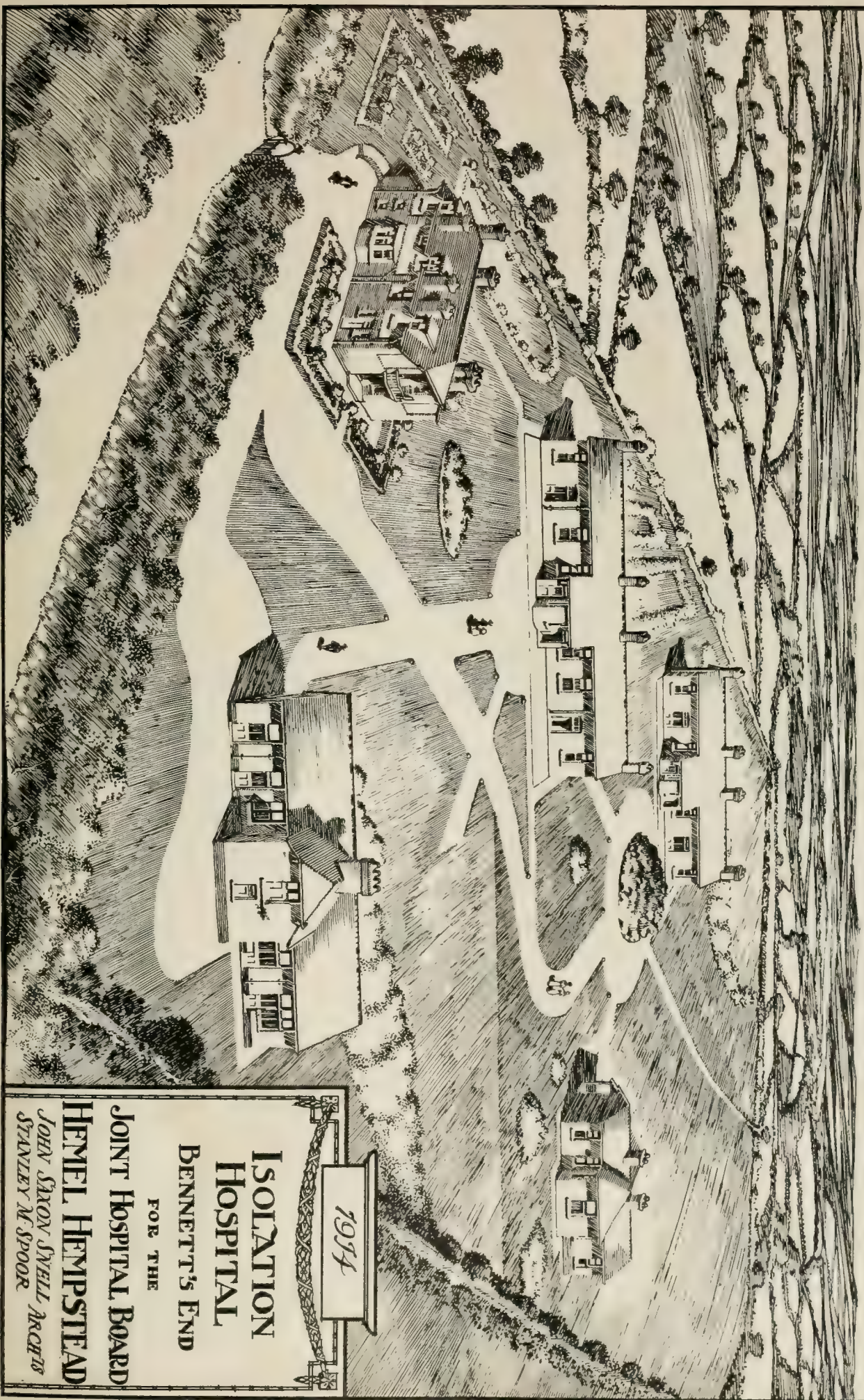
SOUTH ELEVATION



"CROW CLUMP," WEYBRIDGE, SURREY. THE GARDEN FRONT.—Messrs. TUBBS, MESSER and POULTER, Architects.



THE BUILDING NEWS, JUNE 9, 1915.



1914

ISOLATION
HOSPITAL

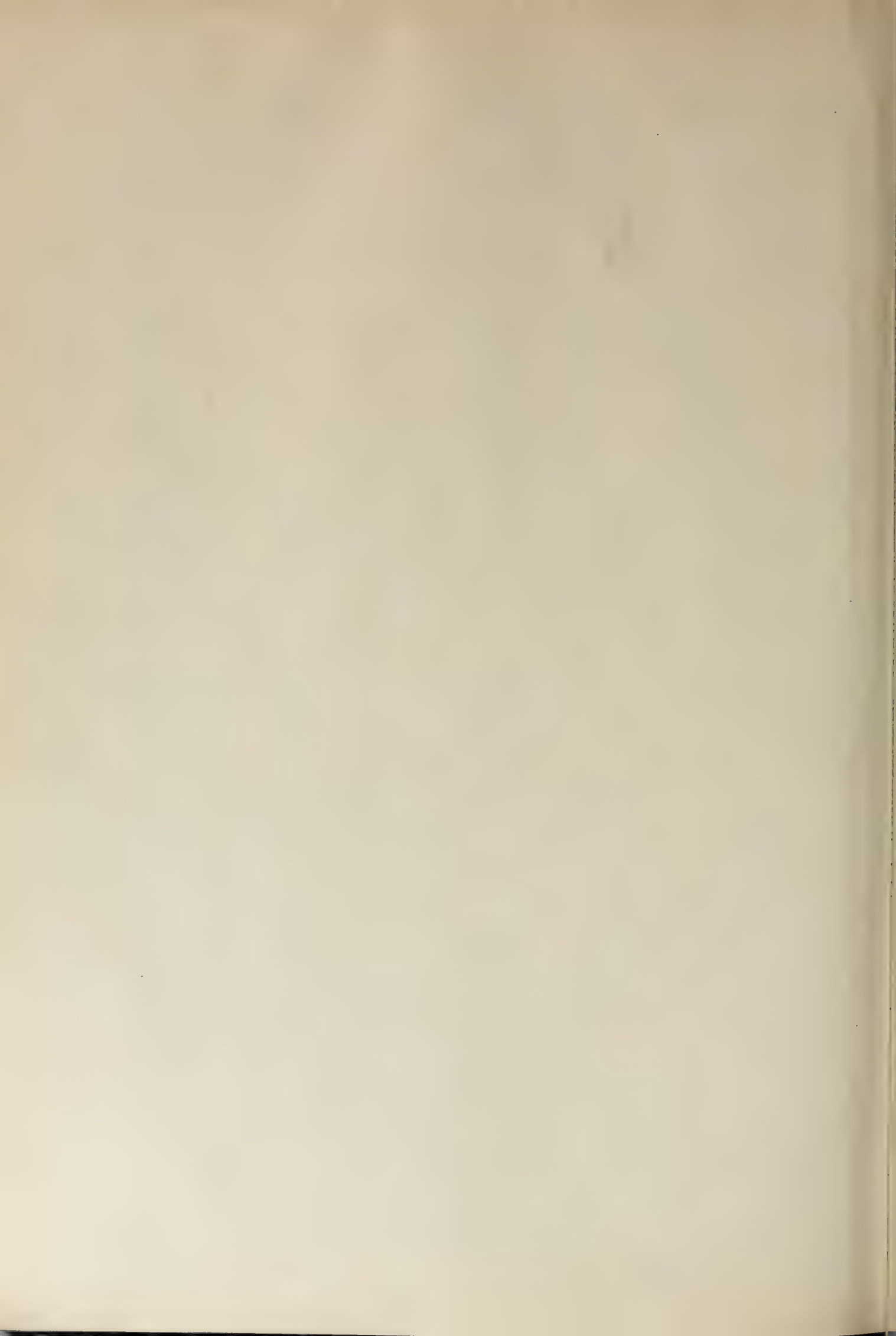
BENNETT'S END

FOR THE

JOINT HOSPITAL BOARD

HEMEL HEMPSTEAD

JOHN Saxon Syell Architects
Stanley N. Spoor



Building Intelligence.

BOURNE, LINCOLNSHIRE.—The formal opening of the new block of buildings forming the isolation hospital for the Bourne Rural District took place on Wednesday last. The hospital is situated on a site of four acres in the South Road, Bourne, about a mile from the town. The buildings have been erected from plans prepared by the council's surveyor, Mr. Thos. Lake. The cost, exclusive of the furnishing, but including the site, has exceeded £5,000, the building being erected by Messrs. Thornhill Bros., of Lincoln. The block consists of a lodge keeper's house standing by the entrance gate. The house for the matron and nurses stands in the centre of the grounds, and provides accommodation for all the staff, together with a store for all the hospital requisites. Behind the administrative block are the fever wards. The main building for this purpose contains two large wards (male and female), each containing six beds, including two for children. Each ward is warmed, and has the usual sanitary arrangements and bath. To the north of the main fever wards is another block of buildings containing four observation wards. At the extreme east of the site is a further block of buildings which include a mortuary, an ambulance shed, a laundry, a disinfectant, and a gas plant. The water supply is from an artesian bore sunk on the site, this work being done by Mr. J. E. Noble, of Thurlby.

BUCKNALL, STAFFS.—The formal opening of the new wards and administrative block at the Bucknall Infectious Diseases Hospital took place on Thursday. The new wards have been rendered necessary in consequence of the Stanfield Fever Hospital, at Burslem, having been taken over by the Stoke-on-Trent Insurance Committee as a tuberculosis sanatorium. The new pavilion is the first one of two stories that the Local Government Board have sanctioned at Bucknall, a relaxation of rule which has resulted in a considerable saving per bed in the cost of erection. On the ground floor are the nurses' duty-room and a ward containing 20 beds, on the basis of 2,000 cubic feet per bed, bath-rooms for adults and children, lavatories, etc. The floors and dados are carried out in terrazzo. The first floor ward is similar to the one on the ground floor, and provides 20 patients' beds; it is reached by an electric lift. At the end of each ward is an emergency exit for use in case of fire, escape staircases being provided. The new wards will necessitate the increase of the staff from 64 to 72, so that an additional administrative block was necessary. This is a building of three stories. On the ground floor is the probationers' sitting room. On the first and second floors are bedrooms, bathrooms, etc. The builders are Messrs. J. Moss and Son, of Milton, and the plumbing has been undertaken by Mr. H. Fradley, of Hanley. The work has been designed and superintended by Mr. Elijah Jones, M.S.A., of Hanley.

Works of sewerage are in progress in the village of Middleham for the Leyburn Rural District Council. Mr. Rodwell is the engineer, and Mr. C. E. Schofield the general contractor.

Mr. Joseph A. Geoghegan, M.R.I.A.I., has been appointed assistant architect to the South Dublin Rural District Council, to assist the council's surveyor in the preparation of plans for labourers' cottages.

The late Mr. James Beckett, of Riverside, Herbert Road, Sandymount, of the firm of James Beckett, Ltd., building contractors, Dublin, who died on March 19 last, left personal estate valued at £21,576.

The amount of polish which can be given to the surface of concrete depends, the *Cement World* remarks, upon the density of the mixture and the nature of the aggregate used. After the surface has been smoothed down on a rubbing bed, or by the use of rotary rubbing stones, as applied in terrazzo floor work, the procedure is somewhat similar to that used in polishing granite or marble. The aggregate exposed on the surface by the rubbing process takes the polish, the appearance of the surface being dependent upon the percentage of aggregate exposed.

Correspondence.

"EXPULSED FROM THE ORDER."

To the Editor of the BUILDING NEWS.

Sir,—Numbers of your readers at home and abroad will be interested to learn that my appeal, which you published under the above heading in *THE BUILDING NEWS* for May 21, has met with the only right or possible response, and I am glad to tell you that (acting upon my suggestion) the Council of the Royal Institute of British Architects resolved on Monday last to expel from the roll of membership all the German and Austrian architects hitherto known as Honorary Corresponding Members.

I have reason to know that my action met with warm support, and I will ask you to give the result thus arrived at in this form of context to my previous letter, so that the record may get indexed for future reference.

These parties are not the only enemy representatives in England who ought to be expelled. A personal friend of mine watched on Primrose Hill all through the night of the Zeppelin raid last week, and he saw flashlights thrown from skylights here and there, doubtless to mark the route to be taken by the invaders, besides the beacon fires set going.—I am, etc.,

F.R.I.B.A.

June 8, 1915.

SOLICITORS' AND SURVEYORS' CHARGES TO BUILDERS.

SIR,—I notice a paragraph in "Current Calamity" about solicitors' charges and the speculative builder. You might well have added the charges of surveyors in relation to mortgages, which, together with solicitors' fees, make a total of about 7½ per cent.

So that a builder wishing for a mortgage of, say, £1,500 pays at least £85 for fees, plus stamp duty, and I have known a case where a builder paid a surveyor a commission for introduction to a solicitor, who in turn charged 2½ per cent. as procuration fee, in addition to usual charges.

It does not always end at that, as, should the mortgagee decide, after about twelve months, to change his investment, that expense has to be paid again, and the builder would be exceedingly fortunate should he succeed in obtaining the amount of the original mortgage. Is it any wonder speculative builders go to the wall in such numbers?

A VICTIM.

WATER SUPPLY AND SANITARY MATTERS.

GLENDON WATER WORKS.—It has been reported to a meeting of Dunfermline District Committee that a settlement has been arrived at with the agents of Lord Camperdown for the purchase of the land at Glendon for the erection of a reservoir and other works. The purchase money, which amounts to £10,515 15s. 6d., was fixed by valuation by Mr. John M. Aitken, Norwood, Lockerbie, and Mr. James Inglis Davidson, Saughton Mains, Corthorpe, the valuers respectively appointed by the District Committee and Lord Camperdown. It was stated by Mr. Wm. Burt, clerk to the committee, that the price worked out at £82 10s. per acre, which, he said, while not a low price, was not anything like the highest price charged under such circumstances.

Mr. P. M. Crosthwaite held a Local Government Board inquiry at Sheerness yesterday (Tuesday) with reference to an application from the Urban District Council for sanction to borrow £5,000 for the enlargement of the refuse destructor.

At Friday's meeting of the Newbiggin Urban District Council the Finance Committee recommended that, as the Public Works Loan Board could not lend money under the Acquisition of Workmen's Dwellings Act, application be made elsewhere. The clerk stated that a firm in Gloucester was prepared to lend £492 at 4½ per cent. for thirty years. The agents' costs for negotiating the loan would be nine guineas, which was four guineas higher than under the Public Works Loan Board, and ½ per cent. higher interest. It was agreed to accept the terms.

LEGAL INTELLIGENCE.

LITIGATION OVER THREE POUND CLAIM.—At Walsall County Court, on June 2, a jury of eight business men was empanelled and sat all morning hearing an action brought by Messrs. Oakley and Wigley, builders, Stou-nall, against Joseph Hinton, property owner, High Heath, Pelsall, the claim being for £3 for preparing plans and specifications. Judge Smith explained that he had heard the case whilst sitting alone, but as there was a direct conflict of evidence he preferred that a jury should say which of the litigants they believed, as they could do so without giving any reasons, whereas he (the judge) could not deliver a verdict without stating in some detail the conclusions at which he arrived, and which influenced him in his decision. The jury, after retiring for about two hours, intimated that they were unable to agree, and they were accordingly discharged.

A YORK ARBITRATION.—In the Assize Courts at York Castle on Wednesday and Thursday Mr. E. J. Pollock, referee, heard an arbitration. The claim is one for £600 damages alleged to have been caused by the subsidence of the "Pack Horse" Hotel, Micklegate, the property of Messrs. Ind, Coope, and Co., Ltd., as a result of extensive building operations carried out by the York Equitable Industrial Society. It was claimed by the plaintiffs that support had been withdrawn from the "Pack Horse" Hotel, and that there had been a subsidence.—Messrs. Ind, Coope, and Co., Limited, were represented by Mr. J. Goodland; while the York Equitable Industrial Society was represented by Mr. Tindall Atkinson, K.C., and Mr. Paley Scott.—Mr. Goodman opened the case for the plaintiffs. He stated that his clients were proprietors of the "Pack Horse" Hotel in Micklegate, York. The buildings were ancient. In 1911 the defendants pulled down the buildings on the west side of the plaintiffs' buildings, and, after excavating on the site, erected during the years 1911 and 1912 new buildings of great and unusual weight. By reason of this withdrawal of support the foundations of the plaintiffs' buildings subsided, the walls cracked, the woodwork and plasterwork were damaged, and the buildings were otherwise injured. The subsidence commenced early in the year 1913 and continued until about March, 1914. The defendants knew, or ought to have known, of the boggy and open nature of the subsoil. The defendants built their medical appliances department right up against the kitchen and clubroom of the plaintiffs' inn, and thereby destroyed the plaintiffs' right of eavesdrop. The estimated cost of repairs and work required to restate the buildings was £200, the loss by the permanent depreciation in value was £330, the fees for inspection and reports were £70, a total of £600, which they now claimed. He called as witnesses Mr. Frank Smedley, plaintiffs' York agent, Mr. Harold Riley, son of the landlord, Alderman E. Walker, an auctioneer and valuer who has practised in York for over thirty years, Councillor George Sharp, who had been in business in the same city for forty years. Under cross-examination by Mr. Tindall Atkinson, K.C., Mr. Sharp produced his report to the plaintiff company dated August 11, 1913.—Mr. Goodland objected to the production of the report on the ground that it was a privileged document.—The Official Receiver ruled that it was not privileged against production if called for.—The report stated that the cost of repairing the buildings would be £185, and that his estimate was £116 15s., with 5 guineas extra for making the report. Witness agreed that the £185 was subject to a deduction of £40 in respect of the chimney foundations. The estimate of £116, he said, would also have to be reduced by £40 similarly, which would bring the amount to £76, but to that would have to be added 15 per cent. for alteration in the prices of materials and labour since the time of the estimate. That would make it £80.—Mr. Atkinson urged that the defendants, of course, were not liable for any increase in the cost of materials or labour on repairs which ought to have been done long ago.—Mr. Edward Holmes, surveyor, of Sheffield and Doncaster, was also called on plaintiffs' behalf, and estimated the permanent damage at £350.—The defendants called Mr. Henry Beck, architect and surveyor, of Doncaster, who was engaged in 1898 by the defendants for the original block of buildings. In June, 1910, he received instructions to prepare plans for the extension. These were passed by the York Corporation, and showed the nature and character of the foundation. Witness got out specifications of the repairs neces-

sary to put the building in perfect order, and Mr. Colman, a well-known builder, of York, estimated in accordance with specification to repair the cracks in series A for £35 14s., and those in series B for £120. Structurally, with the repairs, the building would be just as good. If the licence was removed the building would be worth, at the outside, £1,000, and structural alterations would have to be made to make it any use.—Mr. Henry Colman, builder, York, said he was quite willing to carry out the repairs to the A cracks now at his estimate of £35 odd. His estimate for the B cracks was £128 odd.—Mr. Frank Graham Fairbank, civil engineer, of York, in his evidence frankly admitted that the new building was partly responsible for the A cracks. When a wall was in that state very little would start a movement.—Alderman W. H. Birch, builder and contractor, said he was employed by his late father to do the work in connection with building of the new Co-operative Society block. The west wall of the plaintiffs' premises was in bad condition; the bricks were very old, and the foundations were supported on dry rubble. It would have been very undesirable to have underpinned the plaintiffs' foundations. The rubble would not have stood it.—Mr. Tindal Atkinson, for the defence, submitted that there was no negligence on the part of the defendant society, and there was no evidence to show that they did anything they were not absolutely right in doing.—Mr. Goodland argued that his clients' building had the right of support from the cottage which occupied the ground before the new building was erected and from the land, and on account of the deprivation of that support the buildings were damaged.—The Official Referee, in giving his award, said it was perfectly clear the plaintiffs were not entitled to support from the cottage anterior to the new building. There was a certain right to support in respect of the soil, in so far as that soil supported the soil on which the "Pack Horse" Hotel was built, and the question was whether that right had been interfered with in any way by the defendant company. There was no ground whatever for the suggestion that there was any negligence on the part of the defendant company in the way in which they built their premises on the ground. There was a small amount of subsidence which caused the cracks called series A. It seemed to him that the defendant company were liable for those, and to the extent of those he must hold them liable. It had been claimed that there was permanent damage in respect of the selling value of the premises; but if objection was taken to them it would be taken to the most serious cracks, which were those for which the defendant company were not liable. He had come to the conclusion that the £50 paid into Court by the defendant company would amply satisfy any claim that could be properly made against the defendant company in respect of the erection of their building, and therefore he gave judgment for the defendants, with costs after the date of the payment of the £50 into Court. Up to the time of the payment of the £50 the costs would have to be borne by the defendants. The referee further ordered that the £50 should be retained in Court pending taxation of costs.

The Massachusetts Legislature has passed a measure for the addition of a west wing to the State House at Boston, the cost not to exceed \$400,000.

Alterations and additions are shortly to be made to Knockmore Church, near Ballina, from plans by Messrs. W. H. Byrne and Son, of Suffolk Street, Dublin.

An addition to the beauty spots on the outskirts of York, the new Glen Garden and Recreation Ground at Heworth, was opened by the Lord Mayor of the city on Wednesday.

A public market to be built at the corner of Broadway and 95th Street, New York, at an estimated cost of £2,000,000. The architects are Messrs. Tracy and Startworthy, 244, Fifth Avenue, New York.

A movement to secure the passage of a unitary building law is now being carried on in Massachusetts. A special committee of the Boston Chamber of Commerce has appointed a subcommittee with Mr. C. H. Farnham, a Boston architect, acting as chairman, the purpose of this committee being to gather information and direct the Chamber's attitude towards any bill now pending in the Legislature.

Our Office Table.

The County Councils' Association has organised a national road conference and exhibition to be held from June 25 to July 1 at the Horticultural Hall Westminster. The exhibition is being strongly supported, and will be opened by the President of the Local Government Board, Mr. Walter Long. Among the various subjects relative to the construction and upkeep of roads, prominence will be given to the re-making of the roads in Belgium and Northern France at the conclusion of the war. The Belgian Minister, M. Paul Hymans, will preside over this section, and many prominent Belgians will take part in the discussion.

Three officials of the West Lancashire Rural District Council—Messrs. John Wignall and H. Harr (surveyors) and Mr. J. Holland (road foreman), all of Ormskirk—have had an unpleasant experience. They were engaged in surveying land with plans in their possession at Altcar, near Formby, which is within the Council area, when the suspicions of a military guard close by were aroused, and they were placed under arrest. Explanations were useless, and for nearly seven hours the officials were detained in the guardroom until identified by a police inspector who formerly lived at Ormskirk.

At the fortnightly meeting of the Kirby Moorside Rural District Council, held on Wednesday last, the chairman, Mr. Simpson, asked Mr. C. Wilson (a member of the Council) to explain to the Council his action in building a house at Ness without having first sent plans to the Council for their approval under the Housing bye-laws now in operation.—Mr. Wilson stated that he was unaware of the existence of any such bye-laws. He had not built a new house, but simply rebuilt the old one on three sides, as it had fallen down. A sanitary drain had been put in, also a gully trap, etc., and a York architect who had seen the place said a first rate improvement had been made. He thought the inspector must have had some ill-feeling towards him, or he would never have reported the matter.—Mr. J. Wood (another member) bore out Mr. Wilson's statement as to the building being an old one restored. He considered it a great improvement.—The Chairman said that, after what they had heard from Mr. Wilson, and also Mr. Wood, he thought the Council might allow the matter to pass. Still, they must support their inspector in the carrying out of his duty.—The Clerk said Mr. Wilson was undoubtedly in error, and it was the duty of the inspector to report the case. If they allowed one case to slide, then the public would soon take an advantage of them.—The Inspector (Mr. W. D. Rickaby) said he had no personal feeling in the matter at all, but had simply done his duty. He inspected the work, and found that it did not comply with the requirements of the Council's building bye-laws. The majority of the members strongly upheld the inspector's action, and said it was his duty to report all such cases. The matter then dropped.

Mr. A. B. McDonald, city engineer, of Glasgow, retired last week, after forty-five years' service with the municipality. On the death of Mr. John Carrick, in 1890, the offices of city engineer and master of works, both of which Mr. Carrick had held, were separated, and in October of that year Mr. McDonald was appointed city engineer. On Monday afternoon in last week Mr. McDonald was the recipient of a presentation in the form of two silver rose-bowls from the staff of the office of public works. Mr. Thomas Nisbet, master of works, who presided, observed that Mr. McDonald had given faithful service to the corporation. His duties had been extremely onerous. Glasgow had nearly doubled in area, population, and valuation since Mr. McDonald became connected with the department, and everything for which Mr. McDonald was responsible had been efficiently done. Mr. McDonald, in acknowledging the gifts, said that during his tenure of office the department had carried out very important and often very difficult public work, the cost of which to the citizens of Glasgow had amounted to £4,219,000.

The Board of Inland Revenue anticipate that the valuation of the whole of the United Kingdom as provided for under the Finance (1909-10) Act of 1910 will be completed by the end of this month. This will be so notwithstanding that the work has been much retarded by the calling to the colours of a large proportion of the Inland Revenue staff. Although this great work is on the eve of completion, there are, as was to be anticipated, innumerable matters in dispute, such as appeals against provisional valuations, and these will remain in suspense until the war is over. Some of them depend on interpretations of clauses to be given in the Law Courts, and others are to have the consideration of Parliament.

The Royal Commissioners who have been for the last three years taking evidence as to the state, condition, and housing of the Public Records of England visited Hereford on Wednesday. At the town-hall they were shown the various charters, proclamations and other manuscripts and they remarked that the arrangements for the custody of the records were the best they had seen in this part of the country. The city documents at the town-hall are kept in a strong-room. The important charters are preserved in airtight glass cases in cabinets. Many of the more interesting and more important documents have been bound in volumes. One volume of inventories of the Mayors of Hereford goes back to 1475. The oldest document in the possession of the city is a charter of the reign of Richard I., dated October 9, 1189. The Commissioners stated that a general report of their various inspections would be issued when the work of the Commission had been completed, but probably not until the end of the war. Subsequently the Commissioners went to the Cathedral, where they inspected the Archidiaconal records of Hereford and Ludlow, and various records of the Bishops of Hereford. They also spent a few minutes in the Cathedral Library. Many of the Cathedral records have been published by the Cantilupe Society. The Commissioners visited the Probate Court, Castle Street, where they inspected the strong-room, which contains 80,000 ancient wills and consistorial records, besides several thousand modern wills.

Following the lead of the Merchant Company of Glasgow, the Grand Antiquity Society of Glasgow, at their annual meeting, held on Friday in the vestry of Glasgow Cathedral, discussed the proposal to remove and rebuild the Tolbooth Steeple at Glasgow Cross. Mr. Norrie was in the chair during the earlier proceedings, afterwards giving place to Mr. Archibald Spiers, who was elected his successor for the ensuing year. Dr. William Gemmell raised the question. He said that the steeple was one of the most ancient landmarks that remained in Glasgow, and one of the few that had escaped the tide of destruction. His contention, and the contention of every archaeologist and antiquarian in Scotland, was that if they moved the steeple by one single inch they severed for ever its literary and historical associations. It had been urged that it was only "a rickie o' stanes," but, as had been done in the case of the Auld Brig of Ayr and the brig at Stirling, he did not know of any reason why they could not underpin and strengthen it. The proposal to remove it had received support at the Glasgow Town Council because a large proportion of the members had no sentimental or historical connection with the city, and to them Old Glasgow made no appeal. They were swayed by utilitarian motives. He moved that the society viewed with apprehension and deep regret the proposal to remove the Tolbooth Steeple, and respectfully represented to the Town Council the importance of maintaining it in its present site as a unique monument of the historical and literary past of Glasgow. Mr. Charles J. B. Mabon seconded, and the motion was unanimously agreed to. It was also decided that a deputation should wait upon the Town Council in support of the resolution.

A readable eighteen-penny book on "Timber, from the Forest to its uses in Commerce," by William Bullock, is published by Sir Isaac Pitman and Son, Limited, 1, Amen Corner,

E.C. It is rather for popular consumption than for the architect or builder; but there are some facts in it which neither will find unworthy of note, especially about some of the foreign woods, which the present scarcity will bring more and more into our markets. There are sixteen illustrations.

A seventh edition of that useful household and amateurs' manual, "How to Make and How to Mend" (London: George Allen and Unwin, Ltd., 40, Museum Street, W.C. 2s. 6d.), is rendered additionally welcome by an appendix embodying a few pages on drilling metals and other matters pertaining to the province of the expert. The volume will be found a valuable addition to the reference library of the office, the workshop, and the home.

"Materials of Construction: Their Manufacturing Properties and Uses," by Adelbert P. Mills, M.S. (London, Chapman and Hall, Limited, 19s. net), is a solid American volume of some 700 pages, the outgrowth of lectures and notes used in the author's classes at Cornell University, and covers the whole field indicated by the title. The method of treatment is based on the author's experience as a teacher, with the result that the properties exhibited by a given material are, for the most part, considered as dependent phenomena closely related to certain more or less variable factors connected with the process of manufacture, natural occurrence, and conditions of service or testing, and not as independent qualities inherent in the material itself. That is a line we often wish more teachers and textbook writers kept in view, and a rational one.

Following a previous census in September, 1913, the engineer's department of the Leeds Corporation have now completed a second census of unoccupied houses within the area. An agitation for a further municipal housing scheme has been in progress since that time, but twice the scheme has been rejected by the City Council. The new census shows a general decline of available dwelling houses all over the city. The census of 1913 showed that there were available 2,304 houses at rentals not exceeding 5s. weekly; the new census returns the figure at 1,230. At rentals from 5s. 1d. to 10s. there were returned in 1913 as empty 631, and the number is now stated to be 286. The new census returns 113,200 houses, and the percentage of empties has gone down to 1.7. In the interval the Infirmary extension scheme has caused the demolition of 141 houses, and the Belgian families occupy over 100. By a clearing process the number of houses in areas scheduled as unhealthy has been reduced from 345 to 119, but in spite of this the number of houses described as uninhabitable has increased in the interval from 176 to 253. The total number of houses, habitable and uninhabitable, in the whole city returned as empty has decreased from 4,236 in 1913 to 2,492 in 1915, a reduction of 1.17 per cent., the new percentage being returned at 2.2.

TRADE NOTES.

Boyle's latest patent "Air-Pump" ventilator has been applied to the Calvinistic Methodist Church, Garpollfaith, Mon.

In view of the fact that several asphalt companies—especially those which obtain their supplies from Italy and Sicily—are finding some difficulty in obtaining material owing to many of the employees at the mines having been called up for military service; and in addition to this difficulty the freight charges to England having been increased within the last nine months by over 100 per cent., it will be interesting to know that the Anglo-Sicilian Asphalt Company, Limited, of 250, Hallam House, Westminster, are in a position to quote for deliveries of any magnitude from their stocks of first-class material in London.

A SURE REMEDY.

Doctor.—You must go away for a long rest.

Overworked Builders' Merchant.—But, doctor, I'm too busy to go away.

Doctor.—Well, then, you must stop advertising.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY.—Society of Antiquaries. Ordinary Meeting. Burlington House. 3.30 p.m.

FRIDAY.—Royal Sanitary Institute. Provincial Sessional Meeting at Bristol. Discussion on "The Co-ordination of Military and Civil Sanitary Services in War Time," to be opened by Dr. D. S. Davies, Medical Officer of Health, Bristol. 11 a.m.

CHIPS.

Mr. David Judd, of Kingston Road, New Malden, Surrey, retired builder, died on January 21, leaving £48,273.

The foundation-stone of the new Western Synagogue at Alfred Place, Bedford Square, was laid on Monday by Mr. Solomon Ullman.

The Pumpston Oil Company have decided to build forthwith forty-eight cottages for the workmen at the oilworks, Uphall, near Livingston Station, N.B.

The Evesham Joint Hospital Board have received the sanction of the Local Government Board to a loan of £1,000 for extensions and alterations to the administrative block. It has been decided to proceed with the work at once.

A new United Methodist Church, to be known as St. Paul's, was opened at Elland on Saturday. The cost of the building is about £4,300. Some of the carving has been executed by a Belgian refugee, who has returned to the fighting line.

A revised scheme is being prepared for the Markets Committee of the city council of Manchester for remodelling and enlarging the corporation meat market and abattoirs in Water Street, off Deansgate. The cost is estimated at £10,000.

The designs submitted under Subject XX. for the R.I.B.A. Problems in Design will be on view in the Gallery of the R.I.B.A. next Monday, Tuesday, and Wednesday, the 14th, 15th, and 16th inst. inclusive, between the hours of 10 a.m. and 8 p.m.

Mr. C. Orlando Law, M.S.A., who joined the 3rd Hussars as a trooper on the outbreak of war, was promoted to the rank of corporal in November last, and has now been gazetted to the Royal Engineers as second lieutenant.

The corner-stone of the new Registry Office on Albert Street, Toronto, has been laid by the mayor of the city. The architect is Mr. C. S. Cobb. Messrs. Oakley and Son are the cut stone contractors. The cost of the building is estimated at nearly 400,000 dollars. Work was commenced last September.

The Church Council of All Saints', King's Heath, are proceeding with the new mission hall and Sunday school in the Hazelwell district. A builder's tender has been accepted, and the work will be commenced shortly. The cost, inclusive of fittings, will be £1,750. The site has been given.

At the Manchester Consistory Court on Friday the Chancellor of the Diocese granted a faculty to the rector and wardens of St. Michael's Church, Ashton-under-Lyne, authorising the placing in the church of a mosaic panel to the memory of Captain Walton Mellor, Royal Irish Regiment. Captain Mellor was killed at Mons on August 23 last.

Approval has been given to the application of the Irvine and District Water Board for provisional orders enabling them to construct a new reservoir on Knockendon from the waters of Drum Burn, and to secure temporarily from the Campbell reservoir of the Paisley Corporation a supply by means of a conduit laid from there to the Greenhead filters in the parish of Stevenston.

The American production of creosote will be increased about 25 per cent. by steps recently taken by American manufacturers. In this manner the shortage of imported oil brought about by the War will be to some extent met. There were 122 wood-preserving plants of all kinds in the United States in 1915, as compared with 15 in 1895, and 94 of these used last year more than 79,000,000 gallons of creosote oil, besides large quantities of zinc chloride and other preservatives.

The Streets and Buildings Department of the Scarborough Corporation has about fifty fewer employees than last year at this time, and notice was given on Saturday to another twenty men. This is due to the suspension of public works and to street repairs being deferred. The sanitary staff is maintained at full strength.

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TENDERS.

* Correspondents would in all cases oblige by giving the addresses of the parties tendering at any rate, of the accepted tender: it adds to the value of the information.

CANNOCK.—For the construction of conveniences in Victoria Street, Hednestord; Cannock Road, Chads-moor; and Hednestord Road, Cannock, for the Cannock Urban District Council. Mr. R. Blanchard, engineer and surveyor:—

Hacksley Bros., Wellington £354
(Accepted.)

COVENTRY.—For construction of a lavatory block and office extension, for Messrs. A. Herbert, Ltd. Mr. A. Herbert, A.R.I.B.A., Leicester and Coventry, architect. Quantities by architect:—

Sanitary Block.	
J. Bentley and Co., Leicester ..	£860
W. H. Jones and Son* (accepted) ..	790
T. Hancock and Co.	770
F. Elliott, Leicester	764
Offices.	
T. Hancock and Co.	3,990
E. Harris	3,685
Hallam and Co.	3,600
F. Elliott	3,495
W. H. Jones and Son* (accepted) ..	3,434
J. Bentley and Co.	3,336

* Time 12-14 weeks. Rest of Coventry.

DOVER.—For improvements to the footpath on the Dover and Tinsley main road at Warmsthorpe, for the Rural District Council:—

Birmingham Val de Travers Co. £251 7 8
(Accepted.)

DOVER.—For supply of electrical vehicles, for the Corporation:—

Edison Accumulators, Ltd. £6,700
(Accepted.)

DOVERCOURT.—For rebuilding the Phoenix Hotel, Dovercourt. Messrs. Morgan and Buckingham, architects. Quantities by the architects:—

E. Saunders, Hill Crest, Dovercourt £3,687 9 7
(Accepted.)

DUNDEE.—For supply of pumps and cast-iron piping respectively for the extensions at Carolina Port power-house, for the Corporation:—

W. H. Allen, Son, and C. and J. Wilson (London), Ltd., respectively (accepted).

DUNDALK.—For the annual supplies of timber, for the Harbour Commissioners:—

P. Jennings and Co. (accepted).

DURBAN.—For supply of the following, for the Town Council:—

Accepted tenders: 40 single-phase motors, T. Barlow and Sons (Westinghouse make), £336 6s. 6d.; transformers, T. Barlow and Sons and Vincent and Co., three each, £55 to £56.

EASTBOURNE.—For alterations and additions to Rose-neath, Eastbourne, for new private hotel, for the Rev. Sir Peile Thompson, Bart. Mr. S. G. Scales, M.S.A., Eastbourne, architect. Quantities by the architect:—

Building.	
M. Hookham	£11,967 0
A. W. King and Son (52 weeks) ..	11,875 0
Peerless-Dennis and Co. (37) ..	11,684 0
J. Longley and Co. (50)	11,568 0
Miller and Selmes (39)	10,908 0
A. Chilton (36)	10,430 0
Bodle and Addison (36)	10,380 0
M. Martin and Sons	10,345 0
Jones and Andrews (40)	10,180 0
G. Bainbridge and Son, Eastbourne (35) (accepted) ..	9,870 0
Boundary Walls and Drives.	
J. Longley and Co.	792 0
A. W. King and Son	705 0
Peerless-Dennis and Co.	678 0
Jones and Andrews	597 10
Bodle and Addison	570 0
A. Chilton	549 0
G. Bainbridge and Sons (accepted) ..	536 0
Miller and Selmes	519 0
M. Hookham	501 12
M. Martin and Sons	365 0

ECCLESHALL.—For strengthening and widening Hilcote county bridge, on the Eccleshall and Norton Bridge road, for the Staffs County Council:—

T. Godwin £480
(Accepted.)

EPSOM.—For erection of a shelter in Rosebery Park for the Urban District Council:—

H. and F. Roll £108 10
(Accepted.)

GLAPTHORN.—For erection of a farmhouse at Glapthorn, near Oundle, for Mr. J. Parkinson. Mr. G. B. Chilvers, Oundle, architect:—
O. P. Drever and Son, Ltd., Kettering .. £870 0 0
C. R. Pettit and Son, Thrapston .. 774 0 0
S. Tebbutt and Son, Polebrook .. 657 13 0
W. and C. Loakes, Thrapston .. 634 0 0
W. M. Freeman, Oundle (accepted) .. 600 0 0

GOSPORT.—For supply of a pair of 18in. stroke horizontal cross high-pressure double-acting air compressors, for the Gosport and Alverstoke Urban District Council. Mr. H. Frost, engineer:—
Hughes and Lancaster, Ruabon .. £3,746 (Accepted.)

GRANGETOWN.—For construction of overhead equipment and feeder system (5 miles and 61 yards), for the Grangetown, North Ormesby and South Bank Railless Traction Co.:—
Clough Smith and Co., Ltd. (accepted), Regent House, Kingsway, W.C.

HORNSEY.—For a twelve months' supply of direct-current ampere-hour meters, for the Town Council:—
British Thomson-Houston Co. (accepted).

HOVE.—For paving and other works in School-road (between Marmion-road and Portland-road), for the Town Council. Mr. H. H. Scott, surveyor:—
J. Parsons and Sons, 176, Church-road, Hove .. £305 (Accepted.)

ILFORD.—For making up the following roads, for the Urban District Council, Mr. H. Shaw, M.I.C.E., surveyor:—
Accepted tenders:—Parsons and Parsons, Ilford, Holcombe-road, £596; Emerson-road, £1,097; Tillotson-road, £462; Bethell-avenue, £609. (Accepted.)

ISLEWORTH.—For cleaning, painting and distemper-ing at the union infirmary, Isleworth, for the Guardians of Brentford Union:—
J. S. Fenn, Woolwich, sections 2 and 3 .. £256 18 11 (Accepted.)

ISLINGTON.—For the supply and fixing of 382 yards run of oak pale fencing, for the Borough Council:—
B. Horton and Son .. £128 2 7 (Accepted.)

JOHANNESBURG.—For supply of five miles of trolley wire, for the Municipal Council:—
Telegraph Manufacturing Co., £99 15s. per mile (accepted).

KING'S LYNN.—For supply of two superheaters, for the Town Council:—
Superheater Units, Ltd., Swansea .. £260 (Accepted.)

KYLOE.—For erection of a teacher's dwelling-house at Kyloe, Fenwick, for the Northumberland Education Committee:—
P. Whitlie, 3, Ivy Place, Berwick-upon-Tweed (accepted) .. £485 11 6

LEYTON.—For painting and decorating at the central library, High Road, Leyton; the Leytonstone Public Library, Granleigh Road, Leytonstone; and the Town Hall and Technical Institute, High Road and Adelaide Road, Leyton, for the Urban District Council. Mr. E. H. Essex, A.M.I.C.E., surveyor:—

Central Library.
F. J. Coxhead, Leytonstone .. £90 0 0
J. S. Fenn, Woolwich .. 69 14 6
A. H. Inns, Camomile Street, E.C. (accepted) .. 39 10 0

Leytonstone Library.
F. J. Coxhead .. 134 0 0
J. S. Fenn .. 73 18 0
A. H. Inns (accepted) .. 59 10 0

Town Hall.
F. J. Coxhead .. 122 15 0
J. S. Fenn .. 59 9 0
A. H. Inns (accepted) .. 37 10 0

LEYTON.—For the construction of a temporary fire station on portion of the permanent hospital site, Church Road, Leyton, for the Urban District Council. Mr. E. H. Essex, A.M.I.C.E., surveyor:—

F. J. Coxhead, Leytonstone .. £390
J. Harrison and Co., Camberwell .. 340
L. Lown and Co., Holloway .. 325
Municipal Contracting and Engineering Co., Leyton .. 280
F. W. Palmer and Co., Merton Abbey Ironworks, S.W. .. 295
E. A. Russell, Leytonstone .. 245
J. and J. Dean, Walthamstow (accepted) .. 230

LEYTON.—For erection of a temporary fire station in Church-road, for the Urban District Council:—
J. and J. Dean .. £230 (Accepted.)

LIVERPOOL.—For the painting, etc., of the Picton Hall, small lecture hall and basement of the Brown Library, for the Corporation:—
Mooney and Sons, 77, Hanover-street, Liverpool .. £243 (Recommended for acceptance.)

LEANDUNO.—For installation of a booster at the gasworks, for the Gas Committee:—
G. Waller and Son .. £165 (Accepted.)

LONDON, N.—For supplying and fixing 328 yards of oak pale fencing at the cemetery, for the Islington Borough Council:—
B. Horton and Son, Lewisham Bridge, S.E. .. £128 2 7 (Recommended for acceptance.)

MALLOW.—For erection of fourteen cottages, for the Rural District Council:—
J. Walsh, Glashien Road, Cork, £153 each (accepted).

MANSFIELD.—For construction of a sewer in Debdale-road, for the Corporation:—
Lane Bros. .. £218 8 7 (Accepted.)

MIDDLETON, LANCs.—For work of filling in and levelling required in the erection of workmen's houses at Boarshaw, for the Town Council:—
T. A. Fitton (accepted) .. £137

MILDENHALL.—For supply of 750 tons of granite, for the Rural District Council:—
British Basalt Co. (accepted).

NEWARK.—For erection of a house at Kelham, near Newark. Messrs. Sheppard and Lockton, Bargeate, Newark, architects:—

Builders' Work.

W. and H. Hopes .. £1,164 0
S. and R. Horton .. 1,117 0
Parks and Son .. 1,015 0
G. Brown and Son .. 960 0
Renshaw and Wright .. 951 0
W. Smith, Newark (accepted) .. 910 0

Plumbers' Work.

G. Watts .. 240 0
Parks and Son .. 195 0
S. and R. Horton .. 186 12
Harvey Bros. .. 175 0
S. Ironmonger .. 173 0
A. Snaith, Newark (accepted) .. 159 0

NORWICH.—For erection of a new factory, St. Peter-street, Norwich, for Messrs. Curl Bros., Ltd. Messrs. Morgan and Buckingham, 1, Upper King-street, Norwich, architects and surveyors. Quantities by the architects:—

J. Hurn and Son .. £2,893
J. Youngs and Son .. 2,841
Scarles Bros. .. 2,683
T. Gill and Son .. 2,397
W. J. Hammond .. 2,357
T. H. Yelf, Riverside-road (accepted) .. 2,275 (All of Norwich.)

PONTYPRIDD.—For erection of a vestry at St. Catherine's Church, Pontypridd. Messrs. A. O. Evans, Williams and Evans, Pontypridd, architects:—

D. Davies and Sons, Cardiff .. £798 0 0
G. Harries, Abercynon .. 626 7 2
Williams and James, Coedpenmaen, Pontypridd .. 620 0 0
A. W. Julian, Pontypridd .. 563 0 0
D. Jones, Pwllgwawn, Pontypridd .. 542 12 0
Jones Bros., Treharris .. 526 0 0
E. Jones and Sons, Pontypridd (accepted) .. 518 17 6

PORTSMOUTH.—For electric lighting at the girls' Hostel, Milton-road, Portsmouth, for the Education Committee. Mr. C. W. Bevis, F.R.I.B.A., Elm-grove Chambers, Southsea, architect:—
Furneaux, Riddall and Co., 21, Osborne-road, Southsea .. £858 15 0

Kingman and Co., 277, Shirley-road, Southampton .. 822 7 0
Barnes (Southsea), Ltd., Palmerston-road, Southsea .. 775 0 0
Foot and Milne, Princes Mansions, 66, Victoria-street, S.W. .. 734 0 0
W. N. Walters, 83, High-street Gosport (accepted) .. 649 0 0

SALFORD.—For supply and erection of a wet air filter in connection with the 5,000-kw. turbo-alternator at the electricity station, for the Corporation:—
Heenan and Froude, Ltd., Worcester £327 (Recommended for acceptance.)

SALFORD.—For removal of the existing 24in. gas main, and supply, delivery and fixing of a 22in. welded steel gas main at the Windsor-street Bridge, Salford, for the Corporation:—
Clayton, Son and Co., Ltd., Leeds .. £235 (Recommended for acceptance.)

SALFORD.—For supplying and fixing an actuated sluice plant at the sewage works, for the Corporation:—

Jones and Attwood, Stourbridge .. £970 (Accepted subject to 12 months' trial.)

SNODLAND.—For executing work at the outfall works, for the Malling Rural District Council:—
Chas. Brattle .. £90 0
J. Wilford and Sons .. 55 10
T. Rogers (accepted) .. 50 0

SOUTHEND-ON-SEA.—For the supply of an overhead travelling crane, for the Leigh electricity sub-station, for the Corporation:—
Carrick and Sons, Edinburgh .. £301 (Accepted.)

STURMINSTER MARSHALL.—For alterations and additions to house at Sturminster Marshall, for Captain T. C. Birch. Mr. G. J. Langer, Walsford, Wimborne, architect:—
T. Stockham .. £345
Jones and Son .. 298
W. J. Hubgood, Wimborne (accepted) .. 278

TEIGNMOUTH.—For alterations and additions to the Teignmouth Picture Theatre, for Mr. W. Tonkin. Mr. F. E. Lloyd Downes, Newton Abbot, architect:—
Blunt Bros., Teignmouth .. £454 16 (Accepted.)

TONBRIDGE.—For erection of a fence at the county school for girls, Tonbridge, for the Kent Education Committee:—

E. Punnett and Sons, Tile House, Works, Tonbridge .. £96 3 5
N. Smith, 2, Brunswick Street, Maidstone .. 78 0 0 (* Provisionally accepted.)

TWEEDMOUTH.—For sanitary improvements to the vicarage. Mr. Plummer, Newcastle, diocesan architect:—

M. Gray and Sons, Berwick .. £195 11 11 (Accepted.)

UXBRIDGE.—For the erection of women's lavatory on a site adjoining the Market House, Uxbridge, for the Uxbridge Urban District Council. Mr. W. L. Eves, F.S.I., 54, High-street, Uxbridge, surveyor:—
Lovell and Son, Gerrard's Cross £215 0 0
W. S. Fry, Cowley .. 190 0 0
H. and G. Pratt, Uxbridge .. 184 10 0
L. Aston, Uxbridge (accepted) .. 177 0 0

WATFORD.—For provision of a boiler plant and chimney shaft in connection with the waterworks, for the Urban District Council:—
H. and T. Danks, Dudley .. £3,870 (Accepted.)

WATFORD.—For supply of cast-iron pipes, for the Urban District Council. Tenders recommended for acceptance:—
Cochrane and Co. .. £14,650 19 5
J. Oakes and Co. .. 14,755 11 0

WATFORD.—For construction of a pipe-line, for the Urban District Council:—
H. Ashley, Mansfield .. £6,416 9 6 (Accepted.)

WHANGAREI (N.Z.).—For electric wiring and installation of meters, for the Borough Council:—
National Electrical and Engineering Co., Ltd. (accepted) .. £7,946
A. and T. Burt .. 8,114
Turnbull and Jones .. 8,287

WOLVERHAMPTON.—For conversion of a day industrial school into a cooking kitchen, etc., for the Town Council. Accepted tenders:—
H. Gough and Son, conversion .. £440
Bradford and Co., cooking apparatus .. 380

WOOLHAMPTON.—For repairing the bridge at Woolhampton, for the Berkshire County Council:—
W. E. Theaker .. £125 (Accepted.)

YORK.—For alterations to premises in Spurriergate, for the Corporation:—
F. Shepherd and Son .. £260 (Recommended for acceptance.)

The Bishop of London reopened on Monday evening St. Peter's Church, Mile End, on the completion of renovation and restoration. Erected about eighty years ago by the Charrington family, the structure fell into a very bad state of repair. The roofs have now been renewed, the old galleries removed, a new chancel built, a side chapel placed in position, chairs substituted for the old straight-backed pews, a new organ erected, and the flooring replaced.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the Editor of the BUILDING NEWS, Effingham House, 1, Arundel Street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

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Telegrams: "Timeserver, Estrand, London."

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Bound copies of Vol. CVII. are now ready, and should be ordered early (price 12s. each, by post 12s. 9d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XL., XLVI., XLIX., LIII., LXI., LXIV., LXV., LXVI., LXVII., LXVIII., LXIX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., LXXVII., LXXIX., LXXX., LXXXI., LXXXII., LXXXIII., LXXXIV., LXXXV., XC., XCI., XCII., XCIII., XCIV., XCV., XCVI., XCVII., XCVIII., C., CI., CII., CIII., CIV., CV., CVI., and CVII. may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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Strand, W.C.

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REINFORCED CONCRETE IN PRACTICE.

There is no material used by the architect and builder which imperatively requires more care, both as regards design and construction, than reinforced concrete; and there is none which is so certain to prove unsatisfactory if the best materials and workmanship are not employed, or if the job is not carried out in the strongest manner, irrespective of cost. We have seen work ourselves executed during the past ten years which has already come to grief, and more which is bound to, sooner or later, thanks to bad design or careless supervision, either or both of which were discreditable to all concerned. Things are mending somewhat because architects and builders are becoming more and more conversant with the material and its method of use instead of trusting blindly to "specialists," whose "systems," however reliable theoretically, may or may not stand the ordeal of time or the risks of the employment of careless workmen who cannot, or will not, understand the importance of precautions which seem simple and unnecessary to the ignorant, but which are a paramount necessity. One heedless ganger, for instance, will forget to see that a portion of the work is fully protected from frost till it is set, with the result that a member of the structure is seriously weakened. The excuse is offered, of course, "He didn't know it was going to freeze," and it is, after all, one not without specious force where a contractor neglects to have fitted on the works in cold weather a maximum and minimum thermometer, and to have the readings recorded every day. In important works a hydrometer and a barometer should also find place, and no foreman or clerk of works should be engaged unacquainted with their use.

It is a healthy sign that architects themselves are beginning to contribute to the technical literature of reinforced concrete construction. So far we have had little of the practical kind that is needed. We ourselves, and others, have illustrated plentifully most of the big jobs done during the past ten years, and there are more or less useful volumes, some of them of the usual textbook character. But all this counts for little in comparison with the results collected by the actual architect or engineer who is also capable of collating his own practical experience and presenting it to the intended reader in a form likely to be comprehended. We have read with pleasure one excellent manual of this kind by Mr. A. Alban Scott, Vice-President of the Society of Architects, and published by Messrs. Scott, Greenwood and Co., of 8, Broadway, Ludgate Hill, E.C., at 4s. It bears throughout the welcome stamp of real

practical experience, intelligently applied and lucidly expounded, and we heartily recommend it to all concerned.

In his opening chapter Mr. Alban Scott deals most satisfactorily with the precautions necessary on the part of the architect, contractor, clerk of works, and foreman *on the job* if disaster is to be avoided. At the outset the best chance of that lies in the making sure that the men employed understand what they are about. Not one in ten so engaged to-day is ever likely to arrive at anything approaching comprehension of the nature of the usual stresses if he is left to gather his knowledge from textbooks; but if his superiors will take the trouble to give him a simple explanation of the matter on the ingenious lines and with the very everyday apparatus Mr. Scott suggests on pp. 2 and 3, the workman will follow it and take interest, and we should soon get a trained body of men whose services would be well recognised, and for whom any contractor would always have a preference.

In the preparation of drawings it is of primary importance that they should be clear, then mistakes are almost impossible, no matter how carelessly they are read by the man in charge. Details drawn to a large scale should always be supplied showing accurately how the various bars are to be arranged, worked in, and linked together at all points where rods have to pass one another. If points like these, and others of equal moment, are left to be solved on the works, there will be grave errors of omission and commission. Mr. Scott instances one case, which we are sure is not in the least exaggerated, where in a building being erected by a really experienced contractor his foreman had allowed the centering and steelwork for beams spanning 25 ft. to be erected 2 ins. less in depth than was shown in the drawings; and this occurred where the slab was 6 ins. deep on one side and 4 ins. on the other!

As is well pointed out, but assuredly as scores seem to utterly forget, it is not merely the amount of steel and concrete in a beam that guarantees safety. Equally important is the actual arrangement of the bars at the point of support, and not less so the junction of beams. Junctions are among the booby-traps of the bad designer, and it is not unseldom found needful to ensure safety by the addition of precaution rods, bent to diagonals and other forms, and the builder will find it pay him to order from 1 to 2 per cent. of extra rods as spares, in diameters ranging over the bars in the general work, and of any convenient length. He will find no difficulty in selling any left on his hands.

Many other valuable general hints are given by Mr. Scott. We remember a case

almost identical with one he describes, as an illustration of the great care required where separate joint bars are used in lieu of or in addition to overlapping the bars. The cost of labour per cent. on the steel is, of course, less where joint bars are used, but unless the utmost watchfulness is exercised, these may be accidentally omitted. In the case mentioned it was found after the completion of the work that the joint bars to one of the columns had been omitted, the column standing free. It was then desired to make some additions to the work, and the column had to be removed. It was then also discovered that owing to the concrete to the lower columns having been left quite smooth on the top, there was absolutely no adhesion between the upper and lower columns. We agree with Mr. Scott that where proper and constant supervision cannot be guaranteed, it is perhaps safer to design and carry out the work without the bars overlapping. Certainly, where joint bars are used they should be placed in position before the concreting is commenced. It is bad work—but it is not unseldom to be seen—where the joint bars are pressed into the wet concrete, and naturally get out of place, and serve no useful purpose whatever.

The present scarcity and heavily increased cost of timber emphasises the importance of differences of opinion among contractors as to the best policy with regard to the purchase of centering. Some believe in buying good-class stuff and using it over and over again, while others prefer to purchase cheap timber, and after using twice to sell it for firewood. Each method has its advantages and disadvantages. If good stuff is used over and over again more care is needed in the method of nailing than is sometimes exercised. If cheap timber is used, most minute inspection is needful, especially as regards the presence of dry rot. In either case vigilance must be exercised to keep sawdust, chips, shavings, etc., out of the concrete. The whole chapter on centering is one of the most useful in Mr. Scott's book, and it should be got by heart, for the method of constructing the centering is not only, as he remarks, generally the key to a paying or losing job for the contractor, but almost as often the cause of anxiety to the architect, and loss to the building owner.

The chapters on the preparation of steelwork, or the making of the concrete itself, on striking of the centerings, cutting away, etc., are all well handled. The volume runs to 188 pages, and there are over 130 illustrations, and two folding plates. It is not overloaded with matter which seldom comes within the practical

necessities of the architect or builder, and they and the intelligent clerk of works or foreman will find it the best book of its class suited to their needs yet published.

THE GUILDHALL NAVAL AND MILITARY PICTURES EXHIBITION.

The sixteenth special exhibition which the Corporation of London has gathered together at the Guildhall, and which was opened to the public on Tuesday and will remain so till the end of August, is in many respects the most complete and interesting of any. With the co-operation of the French Ministry of Fine Arts and many other helpers it has assembled a collection which recalls the heroic deeds of our soldiers and sailors in the past, and of our Allies, and in the war which is now engaging the forces of Europe so graphically, that no Englishman or visitor who has the chance should fail to see it before it closes. There are 252 exhibits, many of which few of us have had the opportunity of seeing before, and there is not one bad or uninteresting picture on the walls. Far and away it is the picture show of London of the year, and it will and should add a huge total to the nearly five million people who have enjoyed the fifteen previous exhibitions and the Corporation's permanent collection.

Of the portraits Lemuel Abbott's famous picture of Nelson (3), that

"famous man,
The greatest sailor since the world began,"

which is lent from Greenwich Hospital, naturally claims first mention; and next Francisco Goya's portrait of Wellington (4), lent by the Duke of Leeds. Mr. Hugh G. Riviere's portrait of Sir David Beatty (8) has already been seen at the Grafton Galleries lately; and so have those of Lord Fisher (18), by the late Sir Hubert von Herkomer, and Mr. Winston Churchill (20), by Mr. John Lavery. "The King of the Belgians" (14), by Mr. Harold Speed, was painted within the sound of the guns by the artist. Mr. C. W. Furse's portrait of Lord Charles Beresford (23) is lent by Mrs. Furse. Mr. G. Fiddes Watt's portrait of Mr. Asquith (24) is that painted for Balliol College, Oxford; and Mr. Balfour's (28), by Mr. P. A. De Laszlo, is from Trinity College, Cambridge. "The Grand Duke Nicholas" (32), by Mr. John Charlton, will receive the homage of all. So slim and so soldierly that he barely looks his six feet eight inches, the Grand Duke is the perfect embodiment of the wary tactician who never swerves from his plan or purpose. Sir Edward Grey's portrait (37) is that painted by Mr. William Logsdail, and exhibited at the Royal Academy in 1912. The keenest interest will be manifested in Mr. J. S. Sargent's portrait of General Sir Ian Hamilton (38), and in those of Sir John French (41), by Mr. J. St. Helier Lander, and Earl Kitchener (4), by the late Sir Hubert von Herkomer. No less eagerly will that of General Joffre (50), by Henri Jacquier, be scanned.

But, naturally, it is the pictures of battles and incidents of warfare that the ordinary visitor will most want to see. Among those of recent date "The Chase of the German Cruisers on January 24, 1915" (10), by the Hon. Duff Tollemahe, excellently represents the "Lion" and the "Tiger" driving the enemy vessels into the safe shelter of their minefields, after the sinking of the "Blücher." "The Sinking of the 'Good Hope'" (11), by Mr. Percy F. S. Spence, recalls the gallant attempt made to withstand the superior force of von Spee's squadron last November. "The Fleet of England is Her All" (22), by A. J. W. Burgess,

is inspired by Lord Tennyson's well-known warning to Ministers in 1885:

"Her dauntless army scatter'd, and so small.
Her island myriads 'ed from alien lands -
The Fleet of England is her all-in-all;
Her fleet is in your hands,
And on her fleet her fate."

"The Invasion of the Huns" (30), by Octave Guillonnet, lent by the French municipality of Laval, affords fit comparison with the hordes which have desolated Belgium. "A Brave Man" (34), by Paul Emile Boutigny, lent by the Prefecture of the Department of the Seine, recalls one of doubtless many similar episodes of the war of 1870. One villager, single-handed, is keeping a whole body of Germans at bay. Every shot tells, as he picks off one after another. So far the only one wounded is a woman, and one registers the wish that she may be the only prey of the barbarian invaders and may be avenged by the death of all of them at the hands of the intrepid solitary champion of his country. One of the most mournful of the French exhibits is "The Execution of Marshal Ney" (128), by J. L. Gerome. The body of the Marshal lies prone in the dim grey morning light of December 7, 1815, at the entrance of the Grand Avenue de l'Observatoire, where he was shot at the moment when his wife was vainly pleading for his pardon at the Tuileries. Meissonier's famous "Le Guide" (133), first shown at the Paris Salon in 1883, will be well remembered by some of our readers. It is a finely rendered scene of 1797, when the French army, after the Revolution, were acting on the Rhine and the Moselle. The guide is a young Alsatian peasant who is directing a regiment of dragoons, two of whom have him in their charge, ready instantly to put him to death if treachery becomes evident. Another famous picture is "Napoleon at Arcole" (209), by Baron Gros, of which a small version is to be seen in the Wallace collection. From the Louvre is lent "A Grenadier of the Guards" (211), by N. T. Charlet, vigorous and purposely humorously caricatural.

Of our own more or less familiar military pictures, Maclise's "Meeting of Wellington and Blücher after the Battle of Waterloo" (114) is no doubt a faithful but not very effective rendering of the incident. Another is Lady Butler's "Steady the Drums and Fifes" (221), representing a scene during the battle of Albuera on May 6, 1811, when at a critical moment the Fusiliers drove the French under Soult from the field. It is hardly one of the most successful of Lady Butler's works, but the dearly bought victory is one of the proudest memories of the Army and of the gallant regiment that won it. Another of Lady Butler's is "Balaclava" (229), lent by the city of Manchester.

Of past naval episodes we have "Lord Howe's Victory of the First of June, 1794" (117), a terribly severe contest, but a complete British victory; Maclise's "Death of Nelson" (118), a finished study for the fresco on the Houses of Parliament, lent by the city of Liverpool; "The Battle of Trafalgar" (119), by W. L. Wyllie, R.A.; "Drake in the Straits of Magellan" (160), by Thomas Somerscales; "Britain's Watchdogs" (175), by W. B. Wollen, R.I.; "The Burial of Drake" (226), lent by the Corporation of Plymouth; "Nelson Receiving Admiral Jervis after the Battle of St. Vincent" (236), by A. D. McCormick, R.O.I.; and "Britain's Glory" (55) and "On the Road to Trafalgar" (116), by Bernard F. Gribble.

It is no disparagement of the artists to say that the pictures of the present war,

either on sea or land, are not the most interesting of those to be seen. Opportunities of observation have been few, and it is not now that the great struggle which has no equal in the world's history can be grasped in its extent and vastness. Of those which will interest are "A Good Position" (35), by J. Berne Bellecouer, a scene in the Provius district, Seine et Marne, on September 12, 1914; the gallant resistance of "L Battery of the Royal Horse Artillery at Nery on September 1, 1914" (40), by W. B. Wollen, R.I.; "The Charge of the Scots Greys at St. Quentin" (43), during the famous retreat from Mons on August 28, 1914, by Allan Stewart; and that of the "Twelfth Lancers" (45) the same day, by John Charlton; and the "Charge of the 9th Lancers" (59) on August 24, 1914, by George Rankin, in which Captain Grenfell—who was killed on May 24—won his Victoria Cross.

There is little sculpture shown. The principal objects are "The King and Queen" (1 and 2), by Alfred B. Drury, R.A.; Rodin's fine bronze group, "The Defence, or the Call to Arms" (113); a reduced version of Antonin Merci's "Quand Meme" (113a), the title of which is rather queerly translated in the catalogue; and a bronze statuette of General Wolfe (165a), by F. Derwent Wood, A.R.A.

"BUILDING NEWS" DESIGNING CLUB.

A SMALL CHURCH OF CHRIST SCIENTIST.

Our award is as follows:—"Penwith" first, "Walbroke" second, and "September Morn" third. The premier proposal is undoubtedly the best, notwithstanding the fact that the author has failed to work out his plan sufficiently, and one of the points we refer to is the omission of dotted lines to indicate the exact size of the galleries over the side passageways. The section has to be depended on for information in this regard. The tower being set forward gives a good spacious vestibule, but it would have been preferable to give access from thence to the gallery staircases instead of having to approach them from the cross aisle under the back gallery. Besides this additional facility of egress, light could have been insured from the windows of the stairways right and left. At present the vestibule is open to the objection of being none too light. The seating at the rear of the auditorium scarcely agrees with what we had intended, while the splayed corners of the building curtail the seating space. The incline of the floor in the body of the church is obtained in this scheme by lowering it below the normal ground-floor level, starting the fall at the entrance end, in lieu of having steps up, as suggested at that point of ingress. Our idea was to raise the level at the back of the building, though some would agree that "Penwith's" method is to be preferred because he avoids certain difficulties inseparable from steps up and down, and no doubt the approach at the entrance end is simplified. The specified dual prayer desks are not shown, and no suggestion is made as to housing an organ, a detail which we did not stipulate, wishing to leave some detail open for the competitors to provide on their own initiative. We are not told how access is to be obtained to the tower, and it is in this precise position, with a little ingenuity of contrivance, an organ loft might readily have been introduced in front of a lunette archway similar to those which occur to the quasi-transepts where the windows are set. It is not made clear how the author intended the dome to be carried, and pendentives possibly were contemplated; but the angle splays might have originated a different treatment, so, perhaps, cantilevers would be used to support the girder ring, trussed up under the springing of the saucer dome, employing flat soffits as a ceiling in the spandrels above the canted corners where the supports come. Usually "Penwith" is not strong in constructional details, and some

who view these contests from the outside in superior disinterestedness may fancy such oversights deserve condign exclusion. Nowadays, in scheming work in reinforced concrete building, all sorts of expedients are possible. They may be clever and good, or they may be termed rotten construction, but it is not always advisable to reject offhand a plan of this sort if it so happens that every information is not fully demonstrated. Too much must not be expected from the hands of student-ship. One of the undoubtedly successful architects courted by everybody at the present time as an artistic prodigy was described by a Royal Academician, who was his master, and so ought to know, as "one of the most impractical souls alive." The screen to the boundary frontage line in "Penwith's" design is open to the objection that it would fail to exclude clambering boys and mischievous persons from getting into the forecourt, and, for that matter, no gates are shown to the portal. The top of this gateway is not particularly pleasing in outline, and the plan of the crowning feature of the campanile, where the columns are recessed in a segmental curve, presents a doubtful look, specially when regarded in relation to the roofing drawn above, because that termination seems to be appropriate to a different layout entirely. The general lines, in so far as the auditorium is concerned, is not altogether dissimilar, though the competitors could not have seen Sir John Burnet's plan when they worked out their schemes.

"Walbroke" presents us with a tower rising immediately over the middle of the crossway narthex or vestibule, where it is carried by varied piers and wallings, differing, it may be, so far as they go, in a permissible fashion, but not always desirable manner; but inasmuch as these legs or bearings actually have no relation to what happens above we shall have something more to say on this matter. The plan, however, speaking generally, is worked out more fully than "Penwith's" scheme; indeed, "Walbroke" has spared no pains in so far as his drawing is concerned. He is less satisfactory in the management of the galleries, because they are not subordinated sufficiently to structural lines, and are run round the building with a continuous front, as in a theatre. This, in some respects, may be unexceptionable, but scarcely realises what we intended by filling quasi-transpts planned specially to accommodate galleries. The section illustrates that the base of the tower, already referred to as important, as a fundamental provision is of small moment, inasmuch as the rear face wall of the structure is carried by a long cross girder taken right through the church, and supports in turn smaller girders taking the side walls of the tower. All this ingenuity is the result of poor planning, and the whole thing is bad in structural design. The gallery plan gives no warrant for a tower of any kind. The enormous piers at the four angles of the premises are introduced to overcome the difficulty, and the pair at the tower end of the building doubtless might carry the girders bearing up the tower; but wind pressure has to be taken into account, to say nothing of the exigencies of possibly unequal settlements. In tower building nothing is of greater consequence. Apart, however, from all this, a tower can only be justified when it grows naturally out of the continuance of the plan. "Walbroke" is only trifling with good building by introducing a tower merely as a sham frontispiece in disregard to what follows behind its external rear face. The tower itself is not a very attractive example of design, and the church is wanting in architectural grace, lacking good proportion, though the plan conforms fairly well with our instructions.

"September Morn," the third man, concentrates his efforts on the architectural handling of the façade, in the middle of which we are favoured by a sturdy tower, not improved by the Ionic pilasters pieced in as shown, and the side elevations are indifferent. As in the last-named proposal, the gallery front extends round three sides of the auditorium, and all idea of a transeptal layout on the flanks is lost, the interior being bald to a degree. The fenestration at the

sides is drawn differently in the elevation from what occurs in the longitudinal section. The end gallery is spoiled by a staircase going up into the tower. Unlike the second placed design, no objection can be stated against the construction of the tower in this plan in that regard, although it really encumbers the layout in a crude fashion. The steps at the ends of the aisles are aimlessly wide, seeing that they only lead into the retiring apartments. The splayed walls at the sides of the platform with the curved ceiling above favour the idea of an apse. By this contrivance space is obtained to the rear

necessary to entirely suspend their student-ship competitions and prize-givings. A church for Christ Scientists, when the details of their needs are known, cannot, perhaps, be described as a specially difficult subject; but, at least, the problem is uncommon, with an air of novelty about it, scarcely furnishing a popular sort of undertaking for the novice; indeed, experienced architects possibly would be more diffident in approaching such a commission. It may be simple as a place of assembly; but the actual requirements savour of uncertainty to all outsiders not familiar with the pre-



"BUILDING NEWS" DESIGNING CLUB: DESIGN FOR A CHURCH OF CHRIST SCIENTIST.—By "SEPTEMBER MORN" (Placed Third).

for a couple of water-closets, which had to be got in somehow. Architecturally, the result is scarcely a success from the auditorium, and a segmental line on plan would have been more dignified and less casual in effect. The frontage screen is an ordinary solid wall with an arched gateway leading to the main entrance. The author has marked his drawings by care, showing that he has endeavoured seriously to improve the occasion, and thus did well.

No more ambitious subject has hitherto engaged the abilities of the members of our Designing Club, and the above-named three designs illustrated to-day are in many ways highly commendable, whatever their several shortcomings may be. The depletion of our roll of members by the War has to be remembered. The Metropolitan architectural societies, for this precise reason, found it

cise style of services and other incidental details about which information is not available in building textbooks; consequently this data must be sought first-hand. Few such buildings, comparatively speaking, of the kind have been erected in the United Kingdom, and illustrations of them are far from numerous in the professional journals, whence inspiration is not infrequently sought. Sparsity of precedents very likely induced some members to refrain from attempting the subject. We realised that such hesitation might happen, and so tried, when setting the conditions, to clear up uncertain points. Perhaps the very amplification of the particulars printed with due preciseness put off the less enterprising, or possibly we may have failed to express the requirements with felicity. Those who responded show how seriously they appreciate

the club and value such wholesome chances for competition exercise. Their plans demonstrate that no designer could figure out this scheme without acquiring experience, gaining confidence, and storing up knowledge. The immediate outcome may fail to justify itself as an unqualified achievement; we are too modest to anticipate so unlikely a result as that, but, all the same, the good attempt is a considerable gain to those who engaged in the enterprise.

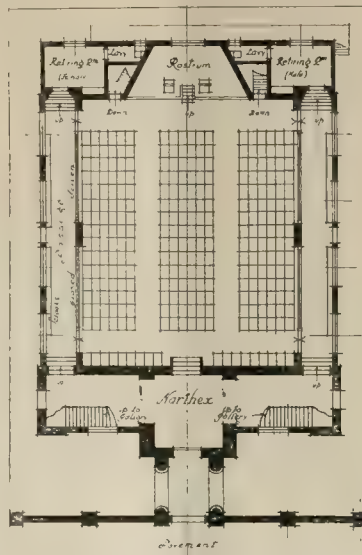
"Bournemouth Queen," whom we place fourth, adopts an Italian type, not altogether inappropriate, and schemed in brick, with pantiled roof, distinguished by characteristic wide overhanging eaves. Having adopted that kind of treatment, it appears an initial mistake to interfere with the completed extent of the big pediment of the attic or clerestory of the building by bringing up the square campanile right in front, cutting off the gable badly, and obscuring this main feature of the façade behind the tower rising at the S.W. angle of the premises. The octagonal stone-built turret surmounting the tower is not quite happy in effect, having a stilted look and an ungainly cupola roof above. The flanking walls of the clerestory are marked by a range of five circular windows set over an arcade of five bays, between the piers of which the gallery fronts are fixed. The result of this arrangement is that the big square piers obstruct the view of the rostrum from the people seated in the back rows of the galleries. The sick and suffering are mostly accommodated on the ground floor, and at this level the spaces between the piers are filled in with a solid wall dividing off the side aisles where the cloaks of the audience are housed. The piers at the entrance end of the auditorium would obstruct some of the rear seats. The retiring rooms are made to project into these side aisles, and their chimney flues go up in two of the arcade piers.

"Pergradus" submits a domed mosque-like building of an Oriental character, with piers to carry the cupola, running down into the body of the auditorium. The scheme is consistent, being all of a piece, well worked out, and quite carefully delineated, if somewhat wanting in spirit, and lacking an evidence of artistic enthusiasm. Perhaps, however, we may say that in execution this church would mark an improvement upon buildings of the same category which we happen to know, but it is uncertain whether so Eastern a style is adapted to services originating in a movement coming from the West.

Christ Scientist buildings, hitherto varied in style as they have been, do not rank as exceptionally attractive or beautiful; but such churches will have to be provided in the near future if the denomination goes on flourishing. Any architect might be called upon, therefore, to design such a building. It is incumbent to be prepared, and pioneers have to incur risks. The easier and less exacting way is to jog-trot along well-traversed roads directed by recognised precedents, but a real advance and reputation is not likely to be made that way. The most notable work done by some of the best-known architects was carried out during the earlier stages of their professional careers, when enthusiasm holds sway, and the critical capacity, if more active, is not ripened by discrimination, which, however, cuts both ways. We wish to stimulate this type of initial energy and unspoilt incentive. Indifferent men, on occasions when special subjects are set, more readily incline to fall out of the ranks, while clever fellows are apt to be lethargic. Both kinds of slackers forget that year by year less room remains for the average half-qualified draughtsman. Everyone cannot hope to excel, and admonitions not to neglect opportunities for personal advancement are taken as common-places, reckoned as "old wife's tales." Just now, of course, scarcely an office in the kingdom has escaped from the loss of the best of the staff, and many of our Club members have had higher obligations thrust upon them. When the session started we had some doubts as to the wisdom of continuing the Designing Club during the duration of

European hostilities. Notwithstanding all that has happened since then, the Club has maintained the proverbially high standard hitherto associated with it. Numerically there has been naturally a falling off, but the designs as a whole have been excellent. Instead of relaxing, we selected this stiff subject to test the foremost competitors, and the outcome warrants the course adopted. One of the most conspicuous exhibits in the Royal Academy Architectural Gallery this season happens to be the Church of Christ Scientist about to be erected in Kensington from the designs of Sir John J. Burnet, R.S.A., whose drawings were reproduced in THE BUILDING NEWS on Friday, May 7, the day before these plans, which we have thus reviewed, were due. At the time they despatched their drawings none of our Club members could have seen the design to which we have thus referred, and, of course, all of the plans were different to that, though the subject was similar by the nature of things.

The following is a copy of the conditions issued for the instruction of the competitors:—A small Church of Christ Scientist in a country town. The site adjoins the main



CHURCH OF CHRIST SCIENTIST.
By "SEPTEMBER MORN" (Placed Third).

street facing south, the building-line to set back 20ft., and the land is level. The plot measures 80ft. wide and 115ft. deep. Economical planning desirable. Five feet at least open way must be kept on each flank of the building, keeping it free from adjacent properties, though windows can be shown east and west. If any light is taken from the north, the windows must come within the area of the site, and not from the boundary line at back. The floor of the auditorium to be 2ft. 6in. higher at the entrance end, and to slope down to the space in front of the rostrum, which will be 4ft. above the lowest level of the auditorium floor. This platform will require two reading desks of ordinary size, with a seat for the reader facing the congregation; but no "altar" or communion-table need be shown, and no special choir seats on the rostrum, which is to be recessed about 12ft. from the body of the building. This is to be seated with benches divided by two 4ft. gangways running south to north, the seats rising with the floor. The auditorium to measure about 60ft. long by 50ft. wide, exclusive of the rostrum recess. East and west of this platform show a small retiring-room, with a lavatory and w.c. for congregational use, and reached from the side passages. A narthex or vestibule at the south end, 12ft. deep, extending the width of the building but including the stairways or part of same. On both sides of the auditorium provide a passage or aisle, opening out of the narthex, and not less than 6ft. wide, and external to the meeting space, where the services are held; but piers or columns may be introduced instead of solid walls to support the fronts of the side galleries over these aisles, and projecting beyond these supports a little into auditorium, a

similar gallery coming over the narthex. In this way the upper stage of the building will be cruciform on plan, with quasi-transepts and extensions north and south, though their widths may vary, the east and west ones being made alike. Stairs without winders leading up to the galleries may be open. In the aisles provide stands for cloaks, these stands being ordinary peg-fitted horses running north and south on one side of each passage. The floors of galleries to be stepped, the lowest level of their floor in front to be 9ft. above the church floor under same. Small vestry to be in half-basement for minister below rostrum, and entrance for choir and minister to be provided from outside, also small lavatory and w.c. A singers' vestry, with sanitary accommodation for both sexes, likewise in basement. The chief light to the church to come over the gallery levels. A low saucer dome may cover the body of the auditorium. A Classical or plain Italian style of design is suggested. The paved forecourt must have a stonebuilt columned screen, with a middle gateway along the street frontage; also a covered way, 10ft. wide, as a short cloister, open at the sides leading up to the front portal from the screen gateway. An emergency door on either side of the building opening into the external spaces on east and west of the building will be needed, and at either end of the narthex a door for the gallery people. The difference of level of floor of the auditorium at south end from the narthex is to be reached by steps rising into the church. Put steps in the middle to reach the centre of the two rows of back seats, which will extend along the south wall beyond the gangways, which may turn east and west before going into the narthex or side passages. Material, brick and stone. Dome built of reinforced concrete. A plain campanile tower may be introduced over the main entrance. Scale for front elevation 6ft. to the inch, and also for screen next the street, which, if space allows, should be drawn separate from the general façade. Side elevation and longitudinal section, showing cloister, 8ft. to inch, and plans 16ft. to the inch. A back elevation if room permits.

THE REGENT PALACE HOTEL.

The Regent Palace Hotel, Piccadilly Circus, which we illustrated and described on page 608 in our issue of May 28, was the scene of a pleasant function last Monday, when a number of guests were invited to a general inspection, embracing more especially the engineering plant designed by and installed under the direction of Mr. A. H. Barker, B.A., B.Sc., Wh.Sc., consulting engineer and professor of heating and ventilating engineering at the London University. The electrical equipment, lighting and power, wiring, etc., was carried out by the company's own staff, under the direction of the chief electrical engineer, Mr. Cushion. The heating, ventilating, and hot-water supply was executed by Messrs. J. Jeffreys and Co., Limited. The plant may be regarded as complete as that in any similar building in the world. There are in all some 300 miles of pipes in the building and 15 miles of air ducts.

There are five electric passenger lifts, each constructed to carry a load of 15 cwts. at a speed of 300 ft. per minute, the height of travel varying from 85 ft. to 122 ft. 3 ins.—this lift travelling from the basement to the roof. The cages are of handsome design and fitted with Waygood-Otis safety apparatus, designed to arrest the descent of the cage in case of failure of the suspension ropes. The winding machines are of the firm's latest pattern, with powerful motors coupled to machine-cut worm and wheel winding gear of highest efficiency, and designed for smooth running.

There is also an electric luggage lift carrying a load of 15 cwts. at a speed of 300 ft. per minute, and two electric goods lifts of the same duty which travel from the basement to the ninth floor. In all there are 32 lifts, including service and restaurant lifts. Waygood-Otis, Limited, have also installed a most complete hydraulic vacuum cleaning equipment, which has the great hygienic advantage of removing the dust from carpets, upholstery, etc., direct to the drain.

Corrente Calamo.

The appeal to the House of Lords in the London County Council and Clode's Trustees case, which we report on another page, arose out of the definition by the Superintending Architect of Metropolitan Buildings of the general line of buildings on the north side of Euston Road between Hampstead Road and Osnaburgh Street, or a length of upwards of 1,100 feet. The line defined by the Superintending Architect's certificate was practically a line 50 feet back from the pavement. Various parties interested appealed against the certificate; but it was confirmed by the Tribunal of Appeal so far as it related to the central portion of the line, being about three-fourths of the whole. An appeal to a Divisional Court was entered by Clode's Trustees against the confirmation by the Tribunal of Appeal of the Superintending Architect's certificate, but the appeal was dismissed. A further appeal to the Court of Appeal was, however, allowed, and an Order made which determined that the general line of buildings was in effect the inner edge of the pavement. The appeal to the House of Lords now decided reverses the decision of the Court of Appeal, with the effect that the general line of buildings is established at a distance of 50 feet from the highway for a length of nearly 900 feet in an important part of Euston Road. The Royal Commission on Traffic in 1905 drew attention to the fact that Euston and Marylebone Roads are in places much contracted, and that along this line there are many forecourts between the street and the line of houses. The Royal Commission emphasised the great importance of preventing any further building upon these spaces, and the County Council has continuously supported these recommendations by their efforts to ensure the maintenance of a satisfactory width between the buildings on either side of the street, as contemplated by the Act of 1756. The present is the second judgment secured by the Council in the House of Lords in effect confirming the Superintending Architect's certificate defining the general line in Euston Road as being 50 feet back from the highway. A similar judgment has also been obtained by the Council in Pentonville Road. It is satisfactory to note that these decisions would seem to re-establish the principle of the Act of 1756 that the general line of buildings in these thoroughfares is situated at a distance of 50 feet from the pavement. Their effect would appear to be to maintain the frontage in this important thoroughfare, and more nearly in accordance with that which was laid down on its original formation, and this is to a large extent exemplified in that part opposite King's Cross Station, which has recently been re-developed. The Council's endeavours should do much to attaining the result recommended by the Royal Commission of converting Euston Road into a continuous street of the first class, and all who value public right and convenience will congratulate it, and the Superintending Architect, and thank the House of Lords for its action.

Where a large old house or a structure built for other purposes is converted into tenements, and is let out in separate suites or single rooms, one of the owner's difficulties is as to the old Inhabited House Duty. A good example of this occurred in the recent case of *Farmer v. Cotton's Trustees* (*Times*, June 9), where the House of Lords once more gave a final judgment in favour of common sense. A big building, originally erected and intended

for use as a hotel, in Princes Street, Edinburgh, failed to catch on, and was converted by the owners into tenements. There was a common front door, hall, staircase, and passages. But the rooms were let out in suites, or singly, as offices and the like, though solely for business purposes. There was a caretaker residing on the top floor, but this is allowable and raised no question. One set of rooms was, however, let to a tenant for use as a dwelling, and upon this fact the Revenue made a claim for Inhabited House Duty, reckoned on the annual value of the whole building, which was assessed at £849, and so wanted £31 16s. 9d. at the rate of 9d. The Court of Session decided against the Commissioners, who now appealed to the House of Lords. Under the old original House Tax Act, 1808, still in force, a house was a house however let and sub-divided. But the Amending Act of 1878 provided for separate assessments where a house, being one property, "shall be divided into and let in different tenements." The sole question here was whether this clause applied in the present case. It was argued that there was not sufficient structural separation, because the plan of the hotel was not substantially altered. But the Law Lords held that as these rooms, singly or in suites, were separately let for business purposes, and the one set as a dwelling house, they came within the meaning of the Act of 1878, and so should be separately assessed. The appeal was, therefore, dismissed, and the Revenue created a further precedent against themselves.

The coming trial of an action by Mr. Ellis de Vesian against the Institution of Civil Engineers should be noted by all similar professional bodies, our own included, and particularly by architects who are members of the same. The Council of the Institution of Civil Engineers has powers by its by-laws and regulations to expel any member for professional misconduct as defined in Section IV. of its by-laws; but it is further stated therein that "The Council shall make such inquiry as they deem adequate, and if they do not find sufficient reason for expulsion, no entry of the inquiry shall be made on the minutes, but if the Council by a majority of at least eleven-twelfths of those present at a meeting of the Council specially summoned for the purpose, and at which at least sixteen members of Council are present, do find good reason for expulsion of the member on the ground that he has been guilty of disgraceful conduct in any professional respect, they shall cause such person's name to be erased from the register, and thus expel him from the Institution." Mr. Ellis de Vesian, who is a civil engineer, as stated in the report in the *Times* of the 10th instant, became a member of the Institution in 1891, and was then employed professionally by Mr. Mouchel, the agent here for the Hennebique system; and in 1907 became a director of the company into which the business was converted. On June 27, 1914, he received a letter from the Council of the Institution, stating that they were considering certain allegations of actions on the part of firms offering to act professionally or in a consultative capacity in connection with engineering work, such as the issue of Press advertisements containing offers to do so; proposing to guarantee the execution of designs on certain estimates; or receiving emoluments or remuneration from contractors, which were at variance with the Institution's rules. Further, the Council added that some of these allegations affected the firm of L. G. Mouchel and Partners.

Mr. Ellis de Vesian promptly denied that he or the company had broken any rules of the Institution; but, after a correspondence lasting some months, the Council wrote him on April 13 last, that at a special meeting held on April 13, they had, after consideration of the advertisement on p. 34 of the August, 1914, issue of a journal called *Ferro-Concrete*, found that he had not discharged the onus of showing that he did not know or approve of the advertisement, and that he had therefore been guilty of a breach of the regulations in Section IV. of the by-laws; and that they (the Council), acting under the powers conferred upon them by Sections III. and IV. of the by-laws and regulations, had ordered his name to be erased from the register, and had declared him to be no longer a member of the Institution. Mr. Ellis de Vesian at once commenced an action against the Institution; and, on the 9th instant, he moved in the Chancery Division, before Mr. Justice Neville, to obtain an injunction to restrain the Institution of Civil Engineers from interfering with his rights as a member, and from enforcing the resolution of the Council purporting to expel him, to omit his name from the register, or to announce that he had been expelled or had ceased to become a member. Mr. Justice Neville, in delivering judgment, said:—"I cannot say what the trial of this action may disclose, but, on the evidence now before me, I think there has not been an infringement of natural justice, and my judicial conscience is not shocked. It seems to me that the plaintiff had an opportunity of meeting the case alleged against him, and was ably advised throughout, and he did not seem very anxious to give more information than he did. There was a difficult question of the responsibility of the plaintiff for the acts of his company. All I have now to consider is whether there was an irregularity in the judicial proceedings of the Council, and I do not think there was. There will be no order on the motion except that the costs will be costs in the action."

The Quantity Surveyors' Association has issued a booklet, which can be obtained of the Secretary, Caxton House, Westminster, S.W., for two shillings, which has been compiled by a committee representative of the Association and the Surveyors' Institution, authorising a "Method of Measurements for Plasterers' Work." Generally, it is laid down that in measurement of plastering the term "rendering" shall mean one rough coat only. As regards internal work, the booklet deals with internal angles, ceilings, ceiling beams, cornices, expanded metal lathing, counter lathing, Scotch bracketing, dubbing, enrichments, ceiling ribs, panelled soffits and beams, coves, quirks rounded angles, etc., plastering to walls, panelled walls and pilaster fronts, narrow widths, skirtings, mouldings, metal lathing for walls, short lengths, making good, and slab partitions and ceiling slabs, with specific directions to meet each case. Externally the rules for internal work are to apply in the same way, special directions being given for rusticated work, and projecting quoins. As regards fibrous work, detailed rules are given for models, methods of fixing, plain slab work, enriched ceilings, cornices and coves, beam casings, arches, domes, and groined soffits. In wall and floor tiling the thickness of the cement floating is to be described, and other specific instructions with regard thereto are appended. The recommendations will certainly promote accuracy and uniformity of custom.

SAXON CRYPT, REPTON, DERBYSHIRE.

I enclose herewith a view of the interior and a sketch plan of this famous crypt, which was asked for by your correspondent on p. 654 in your issue of June 4. Repton was the capital of the ancient kingdom of Mercia, and is probably the most perfect specimen of Saxon architecture extant. A

groined roof and supporting pillars of the crypt are also Saxon, but of later date, not Norman, as at one time supposed. This work was most likely introduced in the tenth century when the church of St. Wystan was first raised—the builders desiring to interfere as little as possible with the old sanctuary, which had been the mausoleum of several

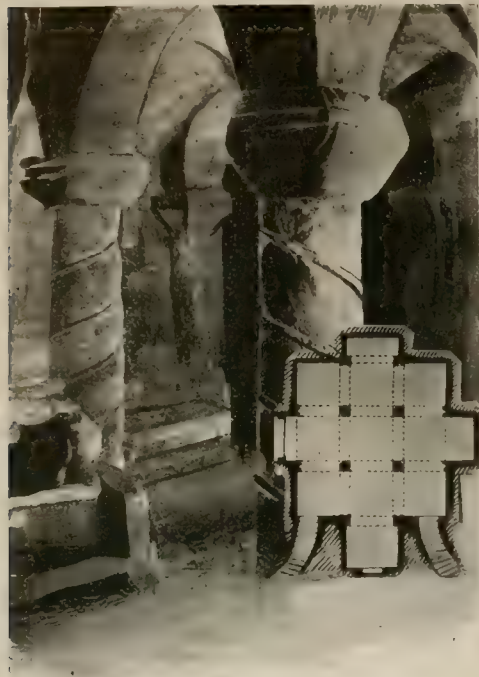
Our Illustrations.

A CHRISTIAN SCIENTIST CHURCH.

Our description of these designs, with further details, will be found in our referee's report on p. 686.

WOMEN'S HOSPITAL, DUNDEE.

This hospital for the treatment of women in sickness has been erected on a fine site overlooking the River Tay, and is the gift of Mrs. F. B. Sharp, Hill of Tarvit, Cupar, Fife. It



SAXON CRYPT, REPTON, DERBYSHIRE.

noble monastery was built here prior to A.D. 660, and burial in its precincts was eagerly sought—it was looked upon as the Westminster of Mercia. The good King Ethelbald was buried here A.D. 755. It was destroyed by the Danes A.D. 874. The Saxons regained possession A.D. 960, and built a church here and dedicated it to St. Wystan. This Wystan was a Mercian prince and heir to the throne. He was murdered by his cousin on the Eve of Pentecost A.D. 849, and buried in the monastery beside his mother Alfreda. In the course of time his grave became the scene of miracles, and resulted in his canonisation. The crypt is probably a portion of this Church of St. Wystan, erected during the reign of "Edgar the Peaceable" (958-975). It is beneath the chancel of the present edifice, approached from the church by a "slype" on either side. The chamber is almost dark (the photo was taken by the aid of magnesium wire), and it is not difficult to imagine the feelings of mysterious awe that would be produced on our forefathers as they descended from the church above, gazed lovingly for a moment at the wonder-working relic in the small recess in the west wall, and then up again the other way to make room for others to follow. The crypt is about 13ft. square, columns 12½ins. diameter and 6ft. 4½ins. high.

The effigy, a fragment of which is seen to the left of the view, proved to be that of Sir Robert Frances of Foremark (c. 1400). It has now been restored to a position of honour in the church, from which it was ejected in 1792. A note in the Transactions of the Derbyshire Archaeological Society (1912), by Rev. J. Charles Cox, LL.D., F.S.A., reads as follows: "The crypt is now kept in a clean and dry condition. On revisiting it I saw no reason to alter the opinion formed and expressed in 1886, when the church was under restoration, in contradistinction to opinion printed ten years earlier—namely, that the outer walls, with their remarkable carvings, pertain to the old lower chancel or crypt of the celebrated Repton monastery destroyed by the Danes in 874, and probably erected as it then stood in that same century. I came to the conclusion, further, that the

chapel and saints, and also to strengthen it to bear the Late Saxon chancel of the church above."

Nottingham. HARRY GILL, M.S.A.

The foundation stones of a new Wesleyan church and Sunday school at Carcroft, near Doncaster, have been formally laid. The cost is estimated at £2,700.

A new United Methodist church at Elland, Leeds, built at a cost of £4,300, has been formally opened. The architects were Messrs. John Wills and Sons, of Derby and London.

is designed as a two-story building, the ground floor being used for administration purposes, and the first floor for the wards, operating theatre, etc. The walls are of hollow brickwork, finished with cement rough-cast, with base to the ground floor; window sills of pressed terracotta brick. The roofs are covered with blue slates, and the floors throughout are of polished rift-grained pitch-pine. The heating is by low-pressure hot water. Mr. James Findlay, of Albert Square, Dundee, is the architect, whose plans we give, with a view of the building from a photograph.

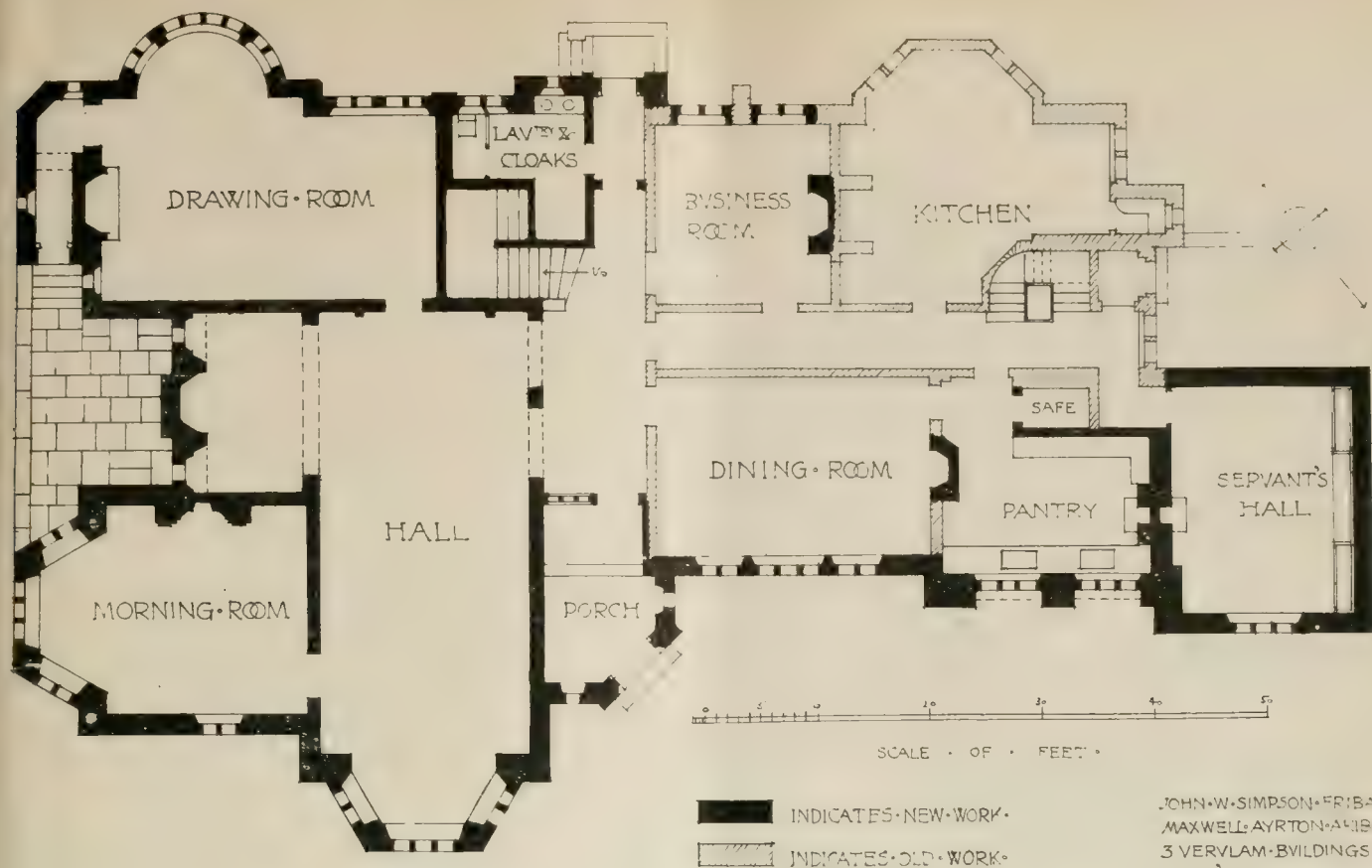
"WHINBURN," KEIGHLEY, YORKSHIRE.

The extensive alterations and additions now carried out to "Whinburn," Keighley, were designed by Messrs. John W. Simpson,

WOMEN'S HOSPITAL ELLIOT ROAD DUNDEE

JAMES FINDLAY ARCHT.
35 ALBERT SQUARE
DUNDEE





"WHINBURN," KEIGHLEY, YORKSHIRE.

Messrs. JOHN W. SIMPSON, F.R.I.B.A., and MAXWELL AYRTON, A.R.I.B.A., Architects.

F.R.I.B.A., and Maxwell Ayrton, A.R.I.B.A., in consultation with Messrs. Moore and Crabtree, of Keighley, who assisted in superintending the erection of the work. The whole of the external walling is of local stone, and the great hall, as well as all internal window arches and many of the fireplaces, are also in the same material. During the building operations the original sixteenth-century panelling and fireplace from one of the rooms of East Riddlesden Hall, near Keighley, were fortunately secured from a London dealer and re-used in the drawing-room at "Whinburn," the ceiling of which was copied from the old ceiling of the room at Riddlesden, from whence the panelling was taken. Another very beautiful ceiling at Riddlesden was also reproduced for the drawing-room. The whole of the new joinery, including the flooring, ceiling joists, and the open roof to the hall, is of exceptionally fine old English oak, entirely hand-worked, and was supplied and carried out by Mr. C. Kerridge, jun., of Sturton Street, Cambridge, who bought the timber specially for this work from old buildings to be demolished. The general contractors were Messrs. Tom Moore and Son, of Keighley. Messrs. George Jackson and Sons were responsible for the special plaster work. The house is fitted with a system of vacuum-cleaning by the British Vacuum Cleaning Company, driven by power from the electric light plant already installed before the alterations. The drawing herewith reproduced is hung on the line at the Royal Academy Exhibition this year, and we give the principal plan, which adds interest to the view.

A TOWN HOUSE IN THE WEST END OF LONDON.

(No. 8, Queen Anne Street, W.)

This drawing, which is now in the Royal Academy Exhibition, represents the flank elevation of the house, which has another front in Queen Anne Street, W. It was designed by Mr. W. Henry White, F.R.I.B.A., of No. 14a, Cavendish Place, Cavendish Square, W., and the building was carried out by Mr. William Willett, of Sloane Square, S.W. The masonry is executed in Portland stone, and the roofs are covered with Westmoreland green slates.

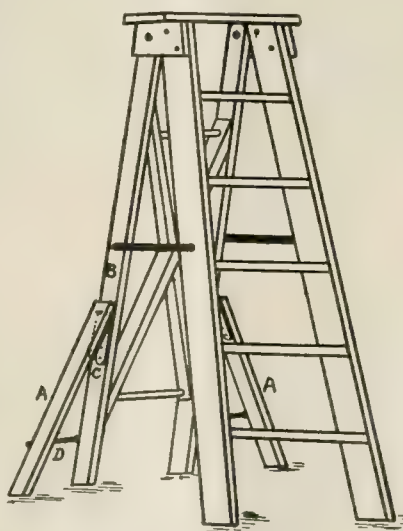
MAKING THE STEP-LADDER SAFE.

By JAMES E. COOLEY.

Many serious accidents are caused by step-ladders. Not a few of these are of fatal character, or result in a permanent disablement to the injured. Wherever these are employed, whether in homes, stores, or factories, great caution is always necessary in using them. Few, if any, step-ladders are considered really safe, as it is well known that a slight overbalance on either side of the

A, that are attached to the sides of the back-support B of the ladder by means of hinges C, and which are pulled out and held by a cord or light chain D. It is easily seen that no matter how overbalanced the weight on the sides of the ladder may become, there is little possibility of the ladder tipping up, as the braces hold it in perfect security.

When the step-ladder is folded up the braces can be closed down to the sides.



ladder will cause it to tip up and pitch the occupant headlong to the ground.

The apprehension one feels when standing on a step-ladder, particularly the top step, is a matter of common knowledge to all, yet the tendency to take risks on these is such that the ladder in its present form should never be used unless someone stands by and holds it secure, or that some means be provided to render the ladder safe at all times when in use.

That means for this are easily obtainable may be seen in the attachment illustrated in this article. It consists of two wood braces, A,

The corporation of Blackpool have come to an arrangement with the War Office to convert the Clifton Park grand stand and racecourse into a convalescent home for wounded soldiers.

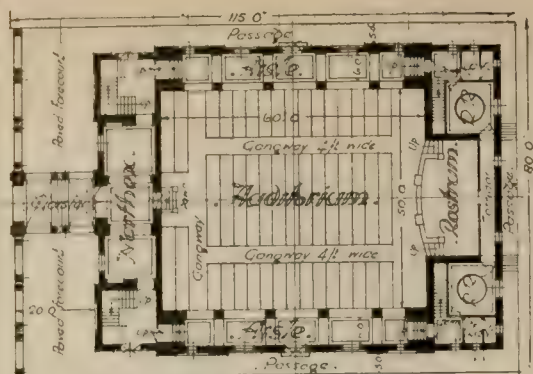
The water committee to the city council of Sheffield have appointed Mr. John Durham as chief cost clerk in connection with the Ewden Valley Works, at a salary of £200 a year, in place of Mr. G. H. Dowdeswell, resigned.

An appeal to purchase for the nation the fine statue, "Le Premier Matin," by M. Egide Rombaux, now being exhibited at the Royal Academy, has met with a splendid response. The money, £800, has been fully subscribed.

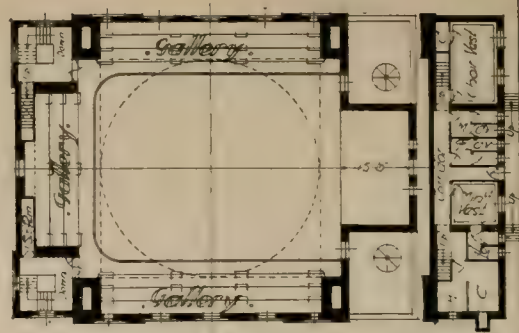
Seventeen million gallons of lake water a day will soon be available by conduit and pressure pipe in the city of Victoria, British Columbia. A ribbon of steel and concrete nearly forty miles long now connects Sooke Lake with Victoria, and the Sooke waterworks are now practically finished.

Dr. T. A. Starkey, Professor of Hygiene at McGill University, Montreal, has been appointed Major with the Canadian Overseas Contingent. He will organise the sanitary section of the Army Medical Corps, the unit consisting of twenty-seven officers, non-commissioned officers, and men. Major Starkey will have under his charge the sanitary arrangements along the lines of communication with the British forces as they advance.

Plymouth Sanitary Committee met the other day to consider the appointment of four district inspectors of nuisances, two of the vacancies being due to the appointment of Mr. Norman Ruse as chief inspector, and of Mr. E. H. Lamb as housing inspector, while the other two arose out of the reorganisation of the staff of the department. After interviewing the candidates, the committee decided to recommend to the town council the appointment of Messrs. Sydney R. Fedrick, Percy Hawthorne (Stonehouse), Herbert L. J. Foster, and W. H. Dawe (Plymouth).



GROUND PLAN.



GALLERY PLAN.

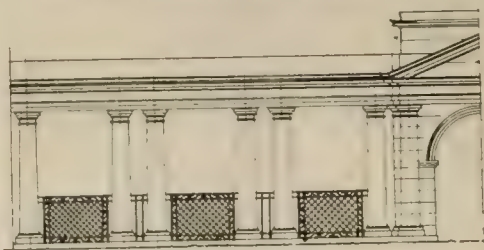
BASEMENT PLAN.

BND C

Subject G

Apr. 15.

HALF ELEVATION OF SCREEN

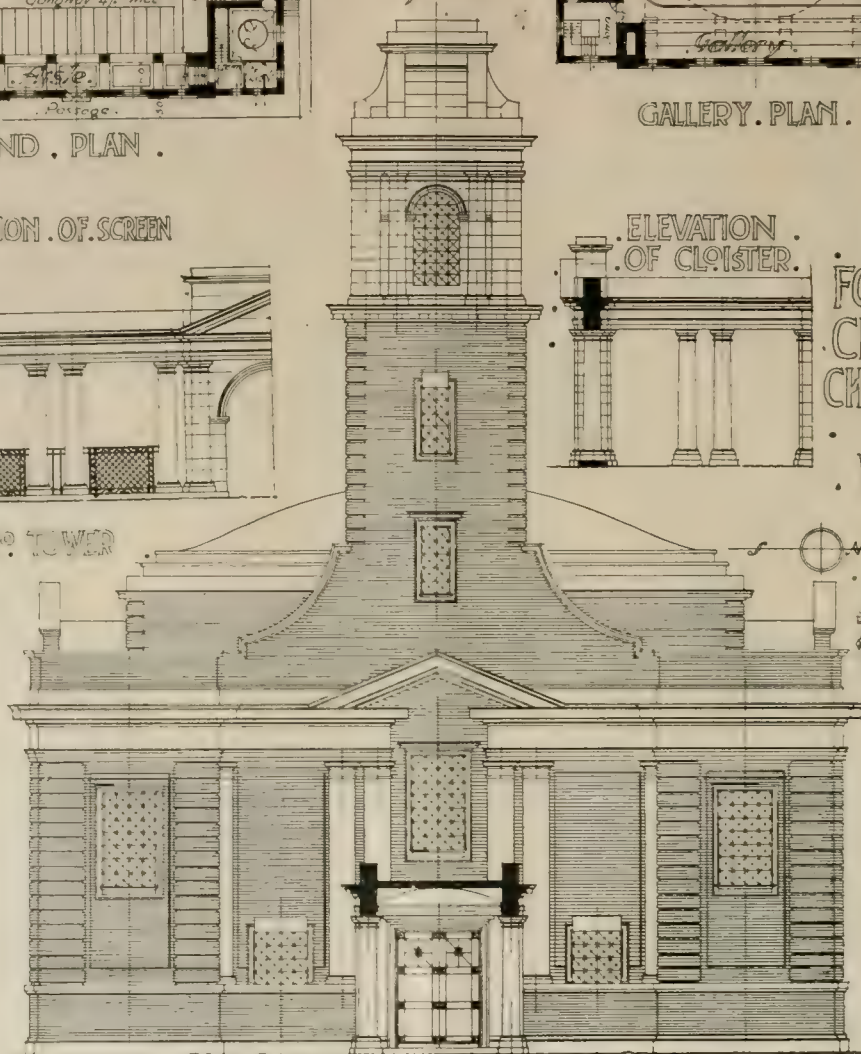


ELEVATION OF CLOISTER



DESIGN FOR A CHURCH OF CHRIST SCIENTIST
by WALBROKE

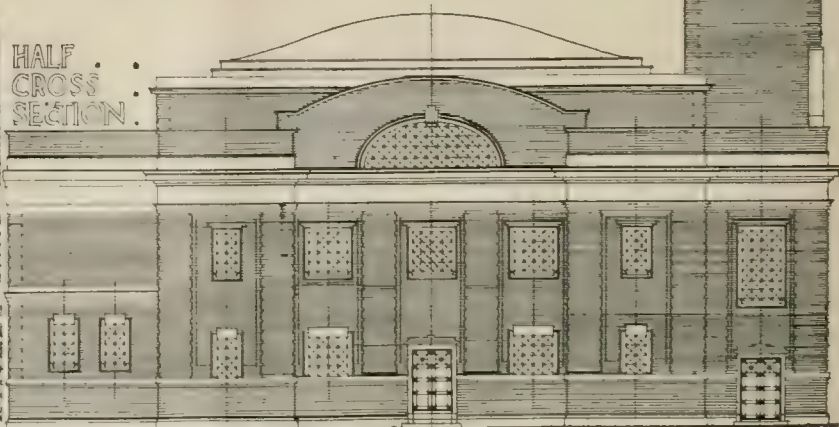
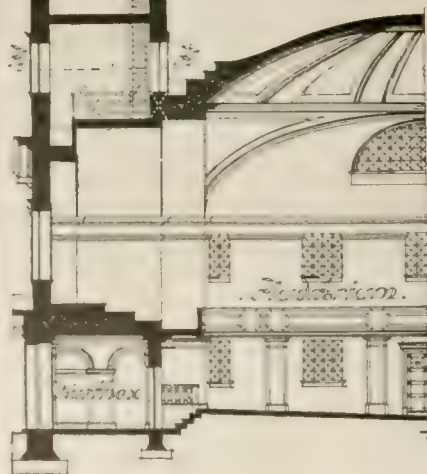
PLAN AA THE TOWER



SOUTH ELEVATION

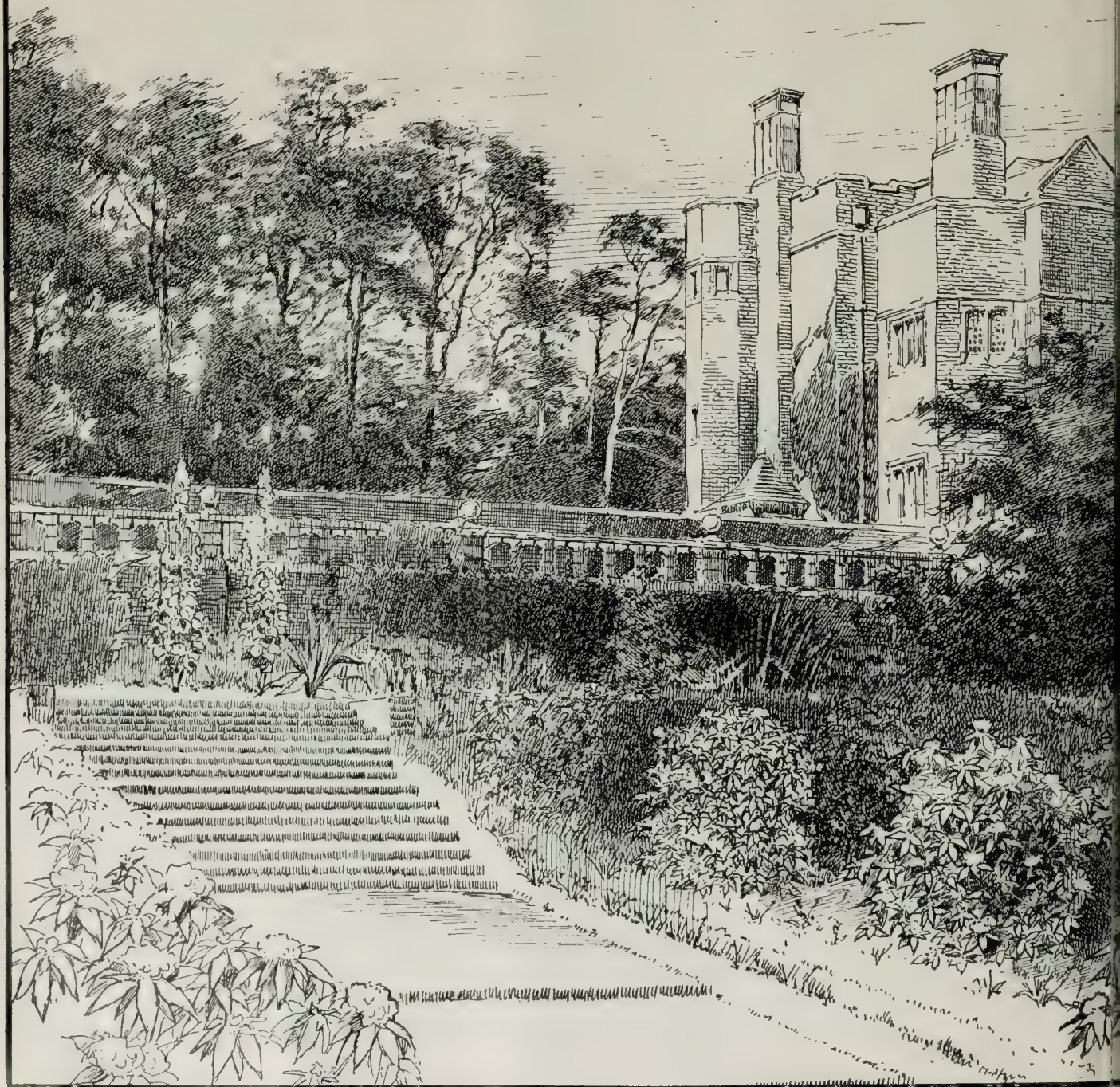
PLACED SECOND

HALF CROSS SECTION

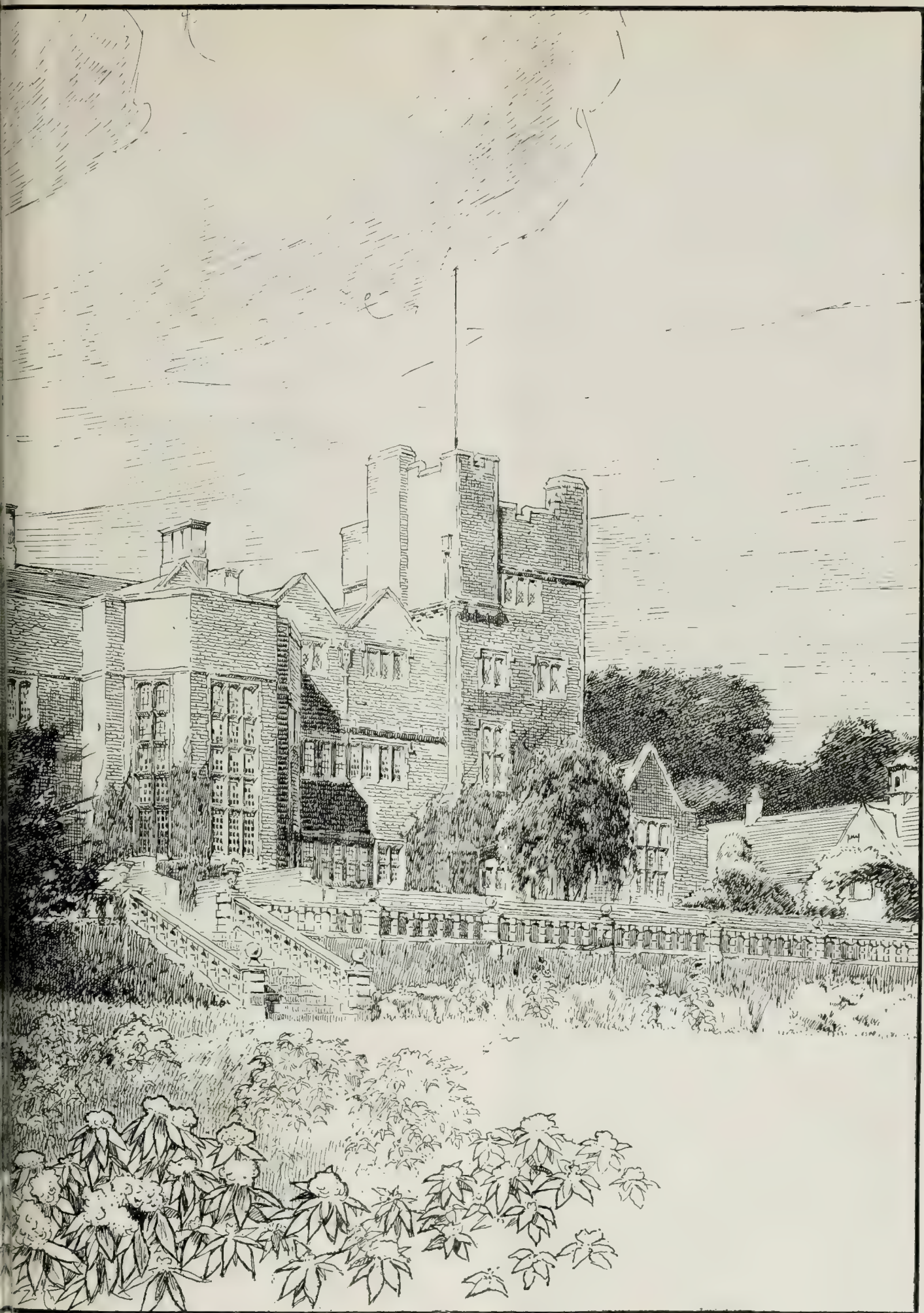


WEST ELEVATION.





"WHINBURN," KEIGHLEY, YORKSHIRE.—Messrs. JOHN

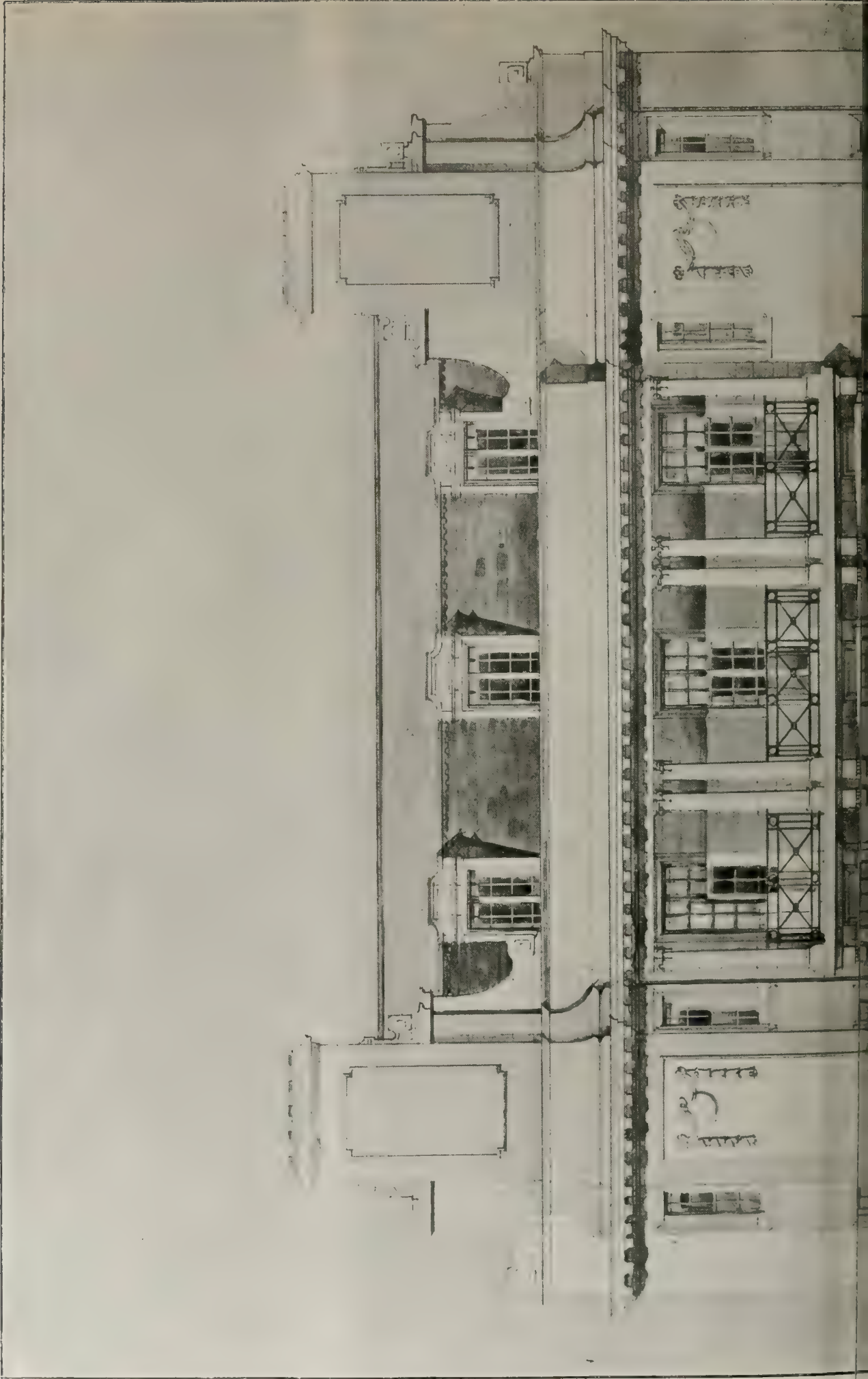


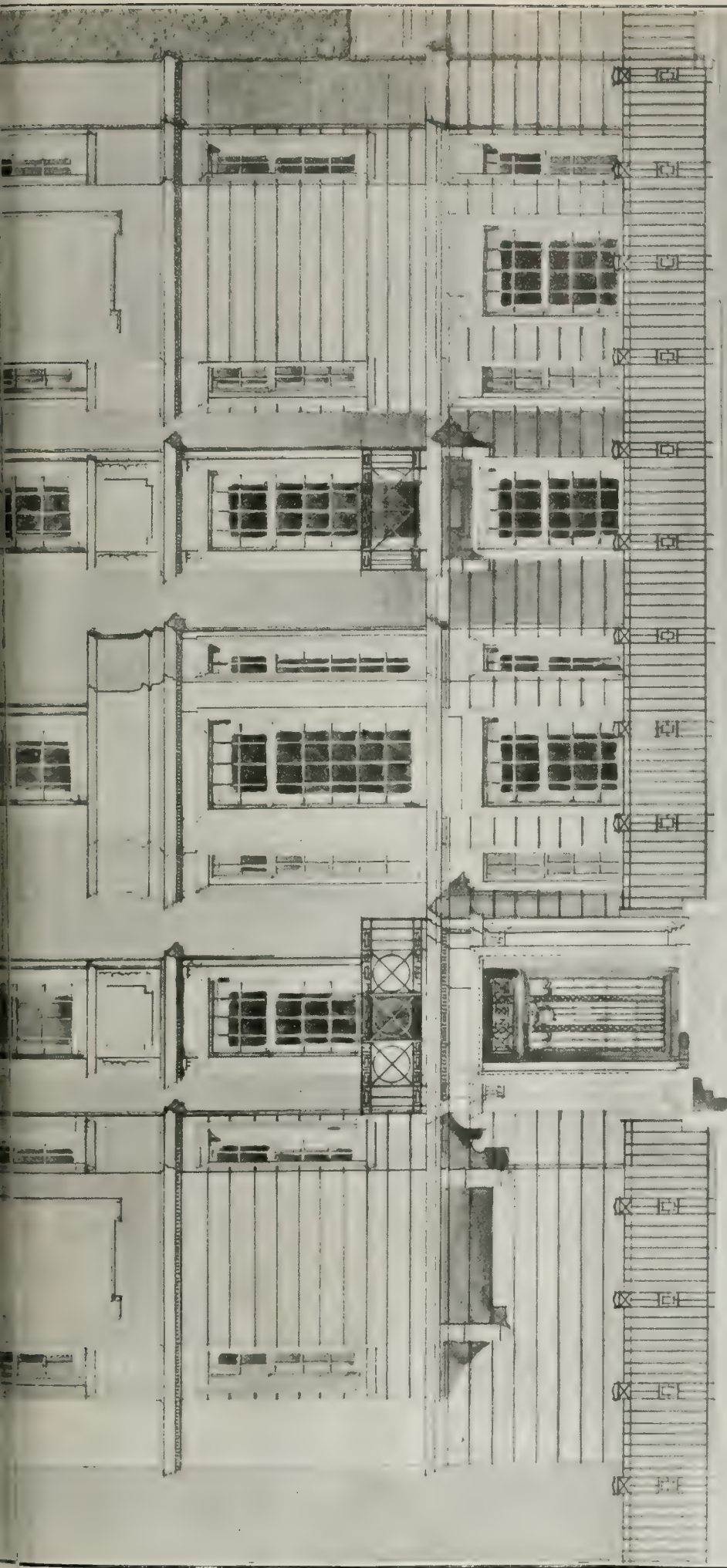
IMPSON, F.R.I.B.A., and MAXWELL AYRTON, A.R.I.B.A., Architects.





THE BUILDING NEWS, JUNE 16, 1915.





178 QUEEN ANNE STREET. W.

BY HENRY WHITE, F.R.I.B.A., ARCHT.

A TOWN HOUSE IN THE WEST-END OF LONDON.—Mr. W. HENRY WHITE, F.R.I.B.A., Architect.



WOMEN'S HOSPITAL, DUNDEE.—Mr. J. FINDLAY, Architect.

OBITUARY.

We regret to record the death of Mr. John Macvicar Anderson, F.R.S.E., the senior surviving past-President of the Royal Institute of British Architects, which occurred at 6, Stratton Street, Piccadilly, on Wednesday last. Born on July 11, 1835, Mr. Macvicar Anderson (of whom we published a portrait in our issue of February 28, 1890) was within about a month of completing his eightieth year. He was the son of John Anderson, a Glasgow merchant, grandson of Dr. Anderson, and great-grandson of the Rev. William Anderson, minister of Gorbals parish in that city from 1775 till 1792. He was educated at the Collegiate School and the University of Glasgow, and afterwards spent one year in the office of Messrs. Clark and Bell, architects of that city, and then entered into association with his uncle, William Burn, of Edinburgh and Stratton Street (1789-1870), who had a very large practice in country mansions throughout the United Kingdom. Among his colleagues in that office were Eden Nesfield and R. Norman Shaw, R.A. In 1870 Mr. Anderson commenced practice on his own account. His first commission independently carried out was Wyamstone Leys, Mid-Wales, and among his earlier works were Lockerley Hall, Hants; Meaford, Staffs; Kimbolton Castle, for the then Duke of Manchester; Cheswardine, Salop; Sandhills and Hedgecroft, Surrey; King's Beeches and Highwoods, Berks; Branton Hall, Lincolnshire; the Wildernesse, Sevenoaks, for the first Lord Hillingdon; Crookham and Iden Manor, Kent; Althorp Park, Northants, for the late Earl Spencer; Woodhatch Lodge, Barrington, Park, Wellingore Hall, Lower Powerscourt, Co. Wicklow, for the late Viscount Powerscourt; Broxbournebury, Herts; Osberton Hall; Hartham Park, Colham, Wilts, for the late Sir Alexander C. T. Dickson; the remodelling of Addington Park; Hatton Grange, Salop; Whittlebury House; High Ashurst, Dorking, and Sandon Hall, Staffs, both seats of the Earl of Harrowby; Horsley Towers, for Earl Lovelace; Croxteth Hall, for the Earl of Sefton; a lodge and other adjuncts to Knowsley, for the Earl of Derby; Rougham Hall, near Bury St. Edmunds; Inverlochy Hall, near Fort William, for Lord Abinger; Bowhill, for the Duke of Buccleugh; Doonside, Ayrshire; 17, Dover Street, W., for the late Marquis of Anglesey; Orwell Park, near Ipswich, for the late Col. Tomline, M.P.; Blankney, for Mr. Chaplin, M.P.; St. Columba's Church of Scotland, Pont Street, Chelsea; and a very large number of alterations and additions to country seats. About five-and-twenty years ago he carried out extensive alterations to 9, Conduit Street, for the Royal Institute of British Architects—a somewhat arduous undertaking, with a council of the leading architects in practice as the building committee—and the Church of St. Mary-le-Strand was restored by him a little later. During later years Mr. Macvicar Anderson's practice gradually drifted into a commercial class of building. He enlarged or rebuilt many clubhouses, including the Naval and Military, Wyndham's, Carlton, Junior Carlton, Union, and Brooks's, and other works were alterations to the premises of Messrs. Christie, Manson, and Woods, King Street, St. James's Square. Among new premises were the Deutscher Bank, George Yard, Lombard Street; Eagle Insurance Co.'s premises, Threadneedle Street; the Commercial Union Assurance Co.'s offices, Cornhill, E.C.; the Guardian Assurance Co., Lombard Street; Mutual Life Assurance of New York, Cornhill; alterations to Lloyd's Bank, Lombard Street; the Union Discount Bank, Cornhill; the British Linen Bank, the Commercial Bank of Scotland, and the new buildings for the Bank of Scotland, Nicholas Lane; Coutts's Bank, Charing Cross; Liverpool and London and Globe Insurance Co., 1, Cornhill; and the Phoenix Assurance Co., King William Street, E.C. Among other appointments he held that of hon. architect to the Royal Scottish Hospital, Crane Court, E.C. He joined the Royal Institute of British Architects as an Associate in 1864, becoming

a Fellow four years later; he served as honorary secretary from 1880 until 1889, when he was elected a vice-president, and, having occupied this position for three years, became president, in succession to Mr. Alfred Waterhouse, in 1891, and was re-elected in 1892, 1893, and 1894. His services to the Institute were marked by the presentation of his portrait painted for the subscribers by the late C. W. Furze, now hung in the Common Room at 9, Conduit Street. He was one of the Trustees and a liberal benefactor of the Architects' Benevolent Society. Mr. Macvicar Anderson's award as arbitrator during the latter part of his presidential term of office settled the carpenters' strike, but was not received with acclamation by the men. Although, on principle, he always declined to compete, he frequently acted as assessor in competitions, among others, in those for the Bishopsgate Foundation Buildings, the Staffordshire County Offices, Stafford, 1892, school-planning for the London School Board, St. Pancras Municipal Buildings, and Cripplelegate Institute, 1893; Darlington Municipal Buildings and Hornsey Board Schools, 1894; the Theological College, Cambridge, Enfield Board Schools, Willesden Board Schools, and West Ham Technical Institute and Library, 1895; Hendon Board Schools, 1899; Walsall Municipal Buildings, 1900; Presbyterian Church, Finchley Road, Hampstead, 1901; Tottenham Municipal Buildings and Harrogate Town Hall, 1902; Sunderland Town Hall and Acton Municipal Buildings, 1903. In 1864 Mr. Macvicar Anderson married Janet, daughter of John Crum, of Auldhouse, N.B. Mrs. Anderson survives, and also five children, of whom the eldest son, Mr. W. B. Anderson, is a partner in the firm of Messrs. Christie, Manson, and Woods, and the second, Mr. Henry Lennox Anderson, L.R.I.B.A., has long been in practice with the deceased at 6, Stratton Street. The funeral service was held at St. Columba's Church of Scotland, Pont Street, Chelsea, on Saturday morning, and was numerously attended, among those present being Sir Aston Webb, R.A.; Sir Ernest George, A.R.A.; and Mr. T. E. Colcutt, past-presidents and gold medalists of the Royal Institute of British Architects, Mr. R. Shekleton Balfour, Mr. Herbert Shepherd, and Mr. Walter L. Spiers.

Mr. Charles Colson, C.B., M.I.C.E., late Deputy Civil Engineer-in-Chief to the Admiralty, died on the 8th inst. at Regency Mansions, St. Leonards-on-Sea, aged 76 years. He was born in May, 1839, and was the son of the late Henry Colson, of Ringwood, Hants. He was the Senior Assistant Civil Engineer at Portsmouth Dockyard from 1881 to 1883, Superintendent Engineer of Malta Dockyard Extension from 1883 to 1892, of Devonport Dockyard from 1892 to 1894, Assistant Director of the Civil Engineering and Architectural Works, 1894-5, and Deputy Civil Engineer-in-Chief Naval Loan Works, 1895 to 1905, when he retired.

The death occurred on Thursday, at Worcester, at the age of seventy, of Mr. Lewis Sheppard, of Sansome Walk, formerly in practice as an architect. At one time he held the position of diocesan architect, retiring from the position about ten years ago. He carried out many and important works of church restoration during the latter part of the episcopate of Dr. Philpott. He was a member of the Worcester Diocesan Architectural and Archaeological Society.

The death took place on Wednesday, at Havelock Road, Norwich, of Mr. James Edwin Teasdel, who had carried on practice at Yarmouth for many years as an architect and surveyor. He was sixty-nine, and had been ill for a considerable time. Mr. Teasdel, who was the son of Mr. William Teasdel, who was resident engineer to the Great Yarmouth Port and Haven Commissioners, was concerned with Mr. James Duckham, a London engineer, in the under-pinning of the Yarmouth Town Hall soon after it was built, a notable undertaking that was undoubtedly the means of securing its stability. He had carried out considerable work for Messrs. E. Lacon and Co., his principal commission for

this firm being the Falcon store on the North Quay. He had also acted as architect for Messrs. Steward and Patteson, another brewing firm, and in his later years he made a complete survey of all the rivers under the jurisdiction of the commissioners. He had also acted as engineer to Burgh Castle Drainage Board, and had done much good work in this direction. He lost his wife last year, and leaves a son and two daughters.

Among those named in the latest list of the R.I.B.A. Record of Honour is Thomas Edwin Turner, Student R.I.B.A., Lieut., 13th County of London (Kensington) Regiment, who was killed while leading his men in an attack on the Aubers Ridge on May 9. Aged 25 years. Mr. Turner was the son of Mr. C. W. Turner, of Selwyn Lodge, Solihull, and was educated at Rugby. He served his articles with Mr. Charles E. Bateman, of Birmingham, and was afterwards in the offices respectively of Mr. Ralph Knott, Messrs. Scott and Fraser, and Mr. Ernest Newton, A.R.A. He was winner of the Birmingham Architectural Studentship in 1910, and was later awarded a Royal Academy Studentship.

Another name recorded is that of Mr. John Hawksmore Irvin, Probationer R.I.B.A., of the 4th Battalion Seaforth Highlanders, who was killed in action on May 9, aged 26 years. Mr. J. H. Irvin, who was the son of Captain T. M. Irvin, R.N. (retired), served his articles with Mr. Richard Crosland, of Harrogate, was afterwards with Mr. Horace Cubitt, A.R.I.B.A., as improver, and later with Mr. Sylvester Sullivan, A.R.I.B.A., as assistant. He joined the Seaforths on the outbreak of war, and had been at the front since the beginning of November. He met his death in the storming of the German trenches in Flanders, all the officers of his battalion sharing his fate, and only seven men surviving of his platoon. He leaves a young widow.

Lieutenant Isaac Althorp Ridgway, M.Sc., A.M.I.C.E., of the 6th Battalion, Australian Imperial Force, died at sea on May 12, from wounds received in action in the Dardanelles on May 8. The younger son of Thomas Joseph and Emily Ridgway, of Wildersmoor, Lymington, Hampshire, he was born at Wildersmoor in 1886, and educated at Parkgate, Brighton College, and the Victoria University, Manchester. He was awarded the University Engineering Certificate, and graduated as B.Sc. with Honours in Engineering in 1907. In 1907 Mr. Ridgway was articled to Mr. Lyster, the chief engineer to the Mersey Docks and Harbour Board. At the outbreak of the war he was in the North-East of Australia acting as assistant engineer of light-houses for the Commonwealth of Australia. He joined the Australian Imperial Force as soon as possible, and went out to the Dardanelles.

Mr. Frank W. Galpin, of the London Rifle Brigade, was killed in action on May 13, aged 24 years. "His was a character of great charm and beauty," writes Mr. Henry James Wise, F.R.I.B.A., in whose office Mr. Galpin was assistant. He had previously been with Mr. Bass, quantity surveyor, and in the Surveying Department of the Office of Works.

Mr. Henry Leonard Holloway, of Lewisham High Road, Deptford, and the Union Works, Church Street, builder and contractor, who died on March 18, left £33,545.

A workmen's institute is about to be built at East Cramlington from plans by Messrs. White and Stephenson, architects, of Newcastle-on-Tyne.

The Middlesex Education Committee have accepted the plans of Mr. J. G. Carey, the engineer and surveyor to the Heston and Isleworth Urban District Council, for the erection of a school to accommodate 840 scholars. The cost is estimated at £13,000.

The application of the Corporation of Mansfield for powers to prepare a town-planning scheme has been inquired into by an inspector representing the Local Government Board, when details were given by the town clerk (Mr. J. Harrup White) and the borough surveyor (Mr. T. P. Collinge). Mr. W. S. Cockerham (clerk to the Skegby Rural District Council) and Mr. J. E. Alcock (clerk to the Mansfield Woodhouse Urban District Council) stated that their respective councils were preparing town-planning schemes.

Building Intelligence.

RUDMORE, HANTS.—The committee of the Winchester College Mission Church at Rudmore, Portsmouth, announce that they have abandoned the original design for a Gothic church, and have commissioned the architects, Messrs. J. D. and P. Coleridge, of North Audley Street, Grosvenor Square, W., to design a basilica instead. Mr. M. J. Rendall, headmaster of the college, explained that the original design was so grand and attractive in itself that it was with the utmost reluctance that the committee were obliged to abandon it. It was purely a question of finance due to the War. The committee were prepared to increase the original figure of £12,000 to £15,000, but the lowest tender was £19,000. The maximum of £12,000 was fixed for the new design, but this sum does not include the furniture of the church and certain other expenses. The style chosen is that prevalent in Northern Italy, with a wide and lofty nave. The sum received up to the present is about £12,700, and it is estimated that £2,500 or £3,000 more will be needed.

PATCHWAY.—The memorial stones of a new Baptist chapel at Patchway, near Bristol, were laid on Wednesday last. The building is being erected by Messrs. Walters and Sons, of Bristol, the architects being Messrs. La Trobe and Weston, of Unity Street, College Green. The premises will comprise a chapel to seat 150, with baptistery, vestries, and provision for tea meetings. The vestries are so arranged that the space occupied by them can be thrown into the chapel when it becomes necessary. The design is simple, with low spreading roof and a porch in front, with traceried windows over. It is being carried out in warm-coloured stone, with a plain tiled roof, surmounted by a ventilating turret. The windows will be glazed with leaded lights, the floors laid solid on concrete, and the roof boarded in panels. The estimated cost, including furnishing, will be about £750.

A new Bethlehem Presbyterian chapel at Brynmenin, built at a cost of £350, has been formally opened. The architect was Mr. A. H. Jenkins, of Blackmill, and the contractor Mr. C. Barry, of Tondur.

Work in connection with the erection of a new co-operative bakery at Brixton, S.W., for the Royal Arsenal Co-operative Society is about to be commenced. The site is at the corner of Brixton Hill and Hayter Road.

A new church is about to be built in St. Margaret's parish, Scotswood, at an estimated cost of £7,000. The architects are Messrs. Hicks and Charlewood, of Newcastle-on-Tyne, and the contractor is Mr. S. F. Davidson, also of Newcastle.

A receiving order has been made in the case of Alfred Grace, trading as H. and E. Lea at Brewer Street, Golden Square, and at Camden Works, Great Church Lane, Hammer-smith, and also as Parkinson's at 5, Bury Street, Bloomsbury, builders and contractors.

The Local Government Board have given authority to the Rural District Council of Wrexham to prepare a town-planning scheme under the Housing and Town-Planning Act, 1909, in respect of an area of about 1,635 acres, situate in four townships in the rural district.

At the last meeting of the Upper Stour Valley Main Sewerage Board at Old Hill, the engineer, Mr. W. Fiddian, reported that a mining subsidence had occurred under a portion of the Lodge Forge syphon at New Street, Cradley, resulting in the fracture of the cast-iron pipe. The damage had been made good. Levels taken recently showed a subsidence of the sewer in Toy's Green Road, Cradley, up to eighteen inches at the end nearest the river.

One more patch of old Liverpool is to yield itself to the hand of "improvement." Chapel Walks and Mercer's Court, with their old-time names and their age-worn cottages, form the site of a building scheme in the vicinity of South Castle Street. Here McCorquodale, the founder of what is now one of the largest printing businesses in the world, commenced work in a humble way with his printing press, and his chair and desk are preserved as heirlooms to the employees.

Correspondence.

EXPELLED FROM THE ORDER.

SIR.—Your correspondent "F.R.I.B.A." appears to take it for granted that the Council, in removing the names of alien enemies from the "Kalendar," have acted on his suggestion. As a matter of history, the motion proposing this action was placed on the agenda paper on May 17, and his letter did not appear until the 21st.—Faithfully yours,

IAN MACALISTER,
Secretary R.I.B.A.

Royal Institute of British Architects,
June 14, 1915.

PARLIAMENTARY NOTES.

FORESTRY IN SCOTLAND.—During the discussion on the Scottish Estimates on Wednesday, Mr. McCulloch Scott criticised the Scottish Board of Agriculture for its neglect of afforestation while it had an unexpended balance of £400,000 at its disposal. Replying, Mr. McKinnon Wood, Secretary for Scotland, said the Board had to reckon with a continuing process, and were constantly laying themselves open to liabilities. Every week the Board were taking up new schemes, and their obligations could not be finished up at the end of the financial year. If they wanted to spend a large sum, running into six figures, on forestry area, he could not take the money away from small holdings and other agricultural schemes. If the Development Commission could find money for forestry in England and Ireland, why should they not ask for it for Scotland? He convinced the Development Commission that the money in the fund was needed for other purposes, and that it was fair that if money were given to England and Ireland for forestry, it was fair that a capital sum should be given to Scotland for a development area. On the Advisory Committee a proposal was brought forward for the purchase of a freehold forest, but the Development Commission said they did not like that scheme, and they would rather put forward another scheme, on which they were prepared to spend £150,000. He had, therefore, actually got the money, but it was on a leasehold scheme, which the Advisory Committee had advised him was unsatisfactory. As a matter of fact, the Exchequer was not giving any money for small holdings in England this year, whereas in Scotland they had their balance with which to succeed with their work. There was a sort of Parliamentary understanding that Scotland was to get this money in the future. He thought he was betraying no secret when he ventured to suggest that the money should be lent back to the Treasury, and that would leave the rights of Scotland intact. There would be no difficulty about the question of interest. In these circumstances he would now propose to withdraw the vote. The vote was withdrawn.

INCOME-TAX ON SEWERS.—In the House of Commons on Tuesday in last week the Secretary to the Treasury was asked if the Commissioners of Income-tax were charging all municipalities in Scotland income-tax on the valuation of their sewers, while the same tax was not being exacted from many cities in England; if some cities were being asked to pay the tax for three years, others for two years, and others for only one year; and if any of the inequalities were found to exist, if the Government would postpone the collection of this tax until it could be imposed upon all cities alike. Mr. Montagu, the Financial Secretary to the Treasury, stated that sewers which were rateable were also chargeable to income-tax, and that the practice throughout Great Britain conformed to that principle. Replying to a further question, he admitted that at the moment the tax was charged only on sewers in Scottish towns, the reason for this being that the sewers were only rateable in Scotland.

There was unveiled on Craigie Hill, near Kilmarnock, on Saturday afternoon, a unique memorial to the Rev. Dr. Landsborough, which has been erected by the Glenfield Ramblers' Society. The memorial consists of a large bronze chart, with a medallion portrait of Dr. Landsborough, and this is laid flat on a round whinstone cairn with square base. The chart indicates all the hills around the district, with their heights, and the distances from the site of the memorial. The medallion is the work of Mr. John Currie, sculptor, Kilmarnock, and the chart, which resembles the well-known one on the Quay at Lucerne, which is of the greatest utility and interest to visitors, was designed by Mr. Robert Currie, mining engineer, Glasgow.

LEGAL INTELLIGENCE.

INHABITED HOUSE DUTY ON HOTEL CONVERTED INTO OFFICES.—**FARMER, SURVEYOR OF TAXES v. COTTON'S TRUSTEES.**—In the House of Lords, on the 8th inst., a considered judgment was given by Lords Loreburn, Atkinson, Parker, Waddington, and Sumner in an appeal from a decision of the First Division of the Court of Session in Scotland on a case stated by the Commissioners for the General Purposes of the Income-tax Acts. The appeal was brought by Mr. Richard Farmer, a surveyor of taxes, in a case stated for the trustees of the late William Cotton, as to whether the Windsor Buildings, Prince's Street, Edinburgh, were assessable to inhabited house duty. The premises were originally built as a dwelling-house, and for some years were used as a hotel. The rooms were now let out separately for business purposes. The premises had a common front door, a common stair, and common corridors leading into suites of rooms, and the only person who slept in the building was a caretaker. The judges of the First Division of the Court of Session held that the premises were "divided into and let in different tenements" in the sense of Section 13 (1) of the Customs and Inland Revenue Act, 1878, and that each separate tenement had to be considered by itself for the purposes of inhabited house duty. That section provides that "where any house, being one property, shall be divided into and let in different tenements, and any of such tenements are occupied solely for the purposes of any trade or business, or any profession or calling by which the occupier seeks a livelihood or profit," inhabited house duty is not to be imposed upon those tenements which are occupied solely for the purposes of trade or business. From that judgment this appeal was brought. As the decision would be equally an authority on this side of the Border, it became one of very great importance. The duty was imposed under the 6th rule of Schedule B of the House Tax Act, 1808, but the respondents claimed that they were entitled to exemption under Section 13 (1) of the Act of 1878, quoted above. The case was argued in March last. The House of Lords, Lord Sumner dissenting, now dismissed the appeal. Earl Loreburn said that the Commissioners had decided that the premises in question were not divided and let in different tenements within the meaning of the Customs and Inland Revenue Act of 1878, Section 13. And as their determination was conclusive, unless it was erroneous in point of law, there was no jurisdiction to review it upon any issue of fact.

In his opinion, on the facts, the Commissioners had come to the only possible conclusion, and he moved that the appeal should be dismissed. Lords Atkinson and Parker concurred. Lord Sumner, on the contrary, held that the decision of the Judges of the Court of Appeal was wrong, and that the appeal should be allowed. Each of the rooms, or groups of rooms, in the building in question was divided by a door from other rooms and let to a different tenant and used for some business purpose of its own not common to the rest of the house. When this house was a hotel, as it was till recently, all the rooms were used for the common purpose of the whole building. The occupiers were paying guests. Now each room was in its use isolated from the rest, and the occupiers were tenants. No better illustration could be given of what was meant by being divided and let in different tenements. On careful examination of the Scottish and English authorities he came to the conclusion that the rooms in these premises were "separate tenements" within the words of the Statute of 1878. By a majority the appeal was dismissed, with costs.

CONTRACTOR AND CHURCH BUILDING COMMITTEE.—In the King's Bench Division, on the 8th inst., Mr. Justice Atkin delivered his reserved judgment in the action by the trustee in bankruptcy of Mr. A. J. Colborne, a builder and contractor of Swindon and Bristol, against the Rev. J. W. Jones and the Building Committee of the Ammanford Church in South Wales, to recover the balance due, some £2,560, in respect of the erection of the church at Ammanford for the defendants, alleging that the defendants, through their architect, Mr. W. D. Jenkins, had acted wrongfully in determining the contract. The defendants set up a claim for damages and said they were entitled to determine the contract as they did owing to delay and to finish the work through another builder. Plaintiff, in reply, denied the right of the defendants to determine the contract, said there was no undue delay on his part, and that if there was delay it was due to the defendants or their architect. The hearing

of the evidence in the case had occupied the Court nine days. Mr. Morton, K.C., and Mr. C. Smith appeared for the plaintiff, and Mr. Hawke, K.C., and Mr. Doughty represented the defendants. His Lordship held that the contract was wrongfully repudiated and determined, and that the builder was entitled to recover on a "quantum meruit" a sum to be ascertained later. Under the circumstances he did not think that the counter-claim arose, and there was judgment for the plaintiff on the counter-claim. Further consideration of the case was adjourned till his Lordship could give formal judgment for the amount to be determined. Mr. Hawke intimated that there might be an appeal.

LIABILITY FOR DAMAGE BY FALLING MASONRY.—At Dudley County Court, on the 8th inst., before Judge Ingham, Thomas Benjamin Williams and Lizzie Bate, joint owners of the Royal Exchange Inn, Blackheath, and Thomas Benjamin Reynolds, licensee of the public-house, sued Edwin Harry Hickman, Station Road, Old Hill, for damages, amounting to £4 12s. 6d., in respect of injuries to the licensed premises. It was stated that a gable of a house belonging to the defendants and adjoining the public-house fell on the roof of the latter premises, making a hole and doing other damage. Defendant contended that it was the duty of the tenant, and not of the landlord, to see to repairs of property, and stated that he was not aware that the gable was dangerous. On the night the accident occurred there was a storm in the locality, and several other accidents were due to the gale. Judgment was given for defendant with costs.

THE BUILDING LINE IN THE EUSTON ROAD: THE L.C.C.'S APPEAL SUCCEEDS.

—In the House of Lords on Friday judgment was given by Lords Loreburn, Parker, Sumner, Farmoor, and Wrenbury in the appeal "London County Council v. Clode and Others." This appeal was brought by the London County Council from a decision of the Court of Appeal, which reversed a decision of the Divisional Court on a special case stated by the Tribunal of Appeal constituted under the London Building Act, 1894. The point for decision was whether on the facts found by the Tribunal of Appeal they were right in law in holding that a certificate of the superintending architect under the London Building Act, 1894, dated September 28, 1909, correctly defined the general line of buildings on the north side of Euston Road between Hampstead Road and Osnaburgh Street with regard to premises belonging to the present respondents numbered 378-384 (even numbers only) in that road, a frontage line of 1,040 ft. The Euston Road was laid out in 1756 under an Act of King George II., c. 88, which provided that no buildings should be erected on new foundations within 50 ft. of the highway. That Act was repealed by the Metropolitan Management Act, 1862, section 75, which stated that no building should be erected beyond the general line of buildings if the distance from the highway did not exceed 50 ft., and this measure, which had been repealed, was substantially re-enacted by the London Building Act of 1894. Long before 1862 buildings had been erected on the forecourts of the then existing buildings and projected beyond the 50 ft. line. As to a certain section representing 380 yards of the Euston Road, the Metropolitan Board of Works in 1876, at the recommendation of their then superintending architect, the late Mr. Lewis Vulliamy, and with the view of establishing a new and regular line of buildings 11 ft. from the roadway and up to the inner edge of the pavement, roughly coinciding with existing projections, passed a resolution enabling all persons interested to build up to that frontage without restriction as to height. This resolution had been extensively acted on. In 1909 Mr. William Leslie Clode proposed to erect certain premises bringing them up to the 11 ft. line. The London County Council objected, and their superintending architect, Mr. W. E. Riley, certified that the general line of buildings in the particular section was the old 50 ft. line. Mr. Clode, with other owners, raised the question of what was to be regarded as the building line before the Tribunal of Appeal, which body, following "Fleming v. London County Council" and "Scott v. Carritt," ultimately gave its decision in favour of the L.C.C.'s contention, so that the certificate of their district surveyor was affirmed. The special case came on before a Divisional Court. Justice Lush, as the junior judge, was of opinion that the appeal should be allowed. Justice Ridley, the senior judge, took a view which coincided with that of the Tribunal of Appeal, holding that the superintending architect to the County Council, in

fixing the building line for that side of the street, was bound to disregard the buildings on the foregrounds as being unlawfully there. Accordingly, Mr. Justice Lush having withdrawn his proof, the decision of the Tribunal of Appeal was upheld. Mr. Clode then went to the Court of Appeal, where he was successful, Lords Justices Vaughan Williams, Kennedy, and Swinfen-Eady unanimously agreeing with the view taken by Mr. Justice Lush, thus allowing the appeal. The County Council took the question to the House of Lords, where the present appeal was argued on five days in April last, judgment being reserved. In their considered judgment their lordships now held that the view taken by Mr. Justice Ridley, affirming the opinion of the Tribunal of Appeal, was right, and allowed the Council's appeal with costs. In giving his decision Earl Loreburn observed that the Tribunal of Appeal were the sole judges of fact, and that their conclusions from the facts were binding upon a Court of Law, provided there were materials upon which they could in reason come to those conclusions, and provided there was no error in law. It was unnecessary to consider such of the intermediate buildings as were erected by consent, because they were so few in number that the general line of buildings at the inner end of the pavement would not be affected by their absence, and also the decision of the House in "Fleming v. London County Council" laid it down that consent buildings were to be disregarded for such a purpose. In the first place an argument was advanced by the respondents that in defining the general building line the Tribunal was in law wrong in disregarding buildings which had been unlawfully erected, at all events after they had been allowed to stand for many years. This contention would mean that if a sufficient number of owners had defied the law and built upon their forecourts right up to the street, all other owners would be free to defy the law and do the same, though if the earlier buildings up to the street had been erected with consent of the proper authority, the other owners would not be free to defy the law. The mere statement of such a contention carried its own refutation. The Tribunal was therefore perfectly right in disregarding unlawful buildings. In the second place it was argued that there was no evidence before the Tribunal to support their finding that substantially all the buildings abutting on the pavement were erected on new foundations, new, that was, since 1756. He could not accept that contention. The Tribunal in cases of that kind saw the houses, examined the buildings, and heard evidence. They also examined various leases, conveyances, and mortgages of the buildings, and none of them showed any old buildings up to the pavement further back than 1851. In his view there was more than enough to support the decision of the Tribunal, who alone had jurisdiction to determine questions of fact. He believed they were quite right in their decision. He, too, disbelieved in these old foundations, but his view added nothing to theirs. In his opinion the appeal should be allowed and the order of the Tribunal restored. The other lords gave concurring judgments, restoring the decision of Mr. Justice Ridley.

TRADE NOTES.

The National Radiator Co., Ltd., are placing on the market a new small size of "Ideal" G. Series boiler, similar in design and construction to the larger sizes of the same series. It is very compact and low in height, and can be supplied with front smokehood and lifting and sliding doors, thus making it particularly suitable for greenhouse work.

A free ticket for the National Road Conference and Exhibition, to be held at the Horticultural Hall, Westminster, S.W., will be forwarded on application to Messrs. Rogers Welch and Co., 26, Page Street, Westminster, S.W. (the manufacturers of "Pruitt," the ideal cement waterproofer).

Lady Mary Gerard laid the foundation-stone of the new out-patients' department at the Royal Albert Edward Infirmary, Wigan, on Thursday. The infirmary was opened by the late King Edward as far back as 1873, and the new buildings are being erected as a memorial to his late Majesty. The cost will be £12,000, of which £7,000 has been raised.

The death of Mr. Reginald Alfred Newbery, F.S.I., took place on Wednesday, at Amblecot, Amesbury, suddenly, as the result of an accident, at the age of 35 years. He was the elder son of William George Newbery, of Salisbury, and a member of the firm of Messrs. Newbery and Harman, auctioneers and surveyors, 25, High Street, Salisbury, and Amesbury.

Our Office Table.

At the meeting of the London County Council yesterday (Tuesday) afternoon the Building Acts Committee submitted a report and recommended that out of ten applicants for the district surveyorship of Greenwich, rendered vacant by the retirement of Mr. A. Conder, that Mr. Albert Anthony Vicary, who has been district surveyor for Streatham West since 1907, be appointed.—The Parliamentary Committee reported that the Council's Tramways and Improvements Bill has passed through all stages in the House of Commons. The proposal for a short extension of the tramway in Farringdon Road from its present terminus opposite Charles Street to the City boundary at Charterhouse Street has been rejected, but the other two schemes have been passed—viz.: Tramways Nos. 2 and 2a—An extension of the existing tramways from the terminus at Aldgate down Mansell Street and across Tower Bridge approach to Tower Hill, terminating by a loop round Trinity Square; Tramways Nos. 4 to 4c—From Well Street, Hackney, to Cassland Road. Provisions are sanctioned for the reconstruction of certain existing tramways.

The impending shortage of labour for the ingathering of the hay crops and the harvest is awakening anxiety in the minds of farmers. At the last meeting of the Chertsey Rural District Council Mr. J. R. Holroyd asked the surveyor if there was any likelihood of his being able to spare any of his men to assist in making the hay. The surveyor replied that the tarring of the roads had to be attended to, and that the men who were left were mostly old. It was suggested that the council should do only absolutely necessary work on the roads, and although some members urged that the roads would suffer very much in the future, the surveyor was instructed to ask the men if they would like to go, it being left to his discretion as to which and how many men could be spared. The Rural District Council of Droithwich by thirteen votes to nine resolved to suspend work upon the roads until the end of September, and to give the men notice, so that they may be free to enter the service of local farmers during harvesting operations.

At the last meeting of the York City Council, Mr. Sharp, chairman of the Streets and Buildings Committee, announced that the sanction of the Local Government Board had been obtained to the preparation of a town-planning scheme in respect to three areas. They had instructed the city engineer (Mr. F. W. Spurr) to take steps in connection with the competition for the premium offered by the late Dr. Tempest Anderson, and other premiums offered by the committee for the best town planning scheme for the three areas, with observations on the remaining areas in and around the city. The report was adopted.

A meeting of landowners concerned in the proposed new town-planning scheme for the western area of Rochdale—which comprises about 1,600 acres of land in Rochdale borough, the Norden urban district, and the Bury rural district—has been held at the town hall, Rochdale, to confer with members of the Rochdale Town Planning Committee regarding the principal roads which it is suggested should be laid out in the area. Accompanying the notice calling the meeting was a map indicating the line which the new roads should take. Generally speaking, they follow the routes of existing roads, which would be widened and put into repair. Some of them are now in bad condition in rainy weather. Alderman Cunliffe, J.P., the chairman of the Corporation Town Planning Committee, presided. Between thirty and forty gentlemen were present, including representatives of considerable estates involved. In addition to the question of the main roads, as to which some divergence of view was expressed, the proposed restriction of the number of houses to be built—a maximum of twenty per acre is suggested—was criticised. Owners and agents will confer with the town clerk and the borough surveyor as to any objections they entertain to the tentative layout of the roads, and the

Town Planning Committee will then consider them in a sympathetic spirit.

A public inquiry was conducted at Seaton Delaval on Thursday respecting an application of the Seaton Delaval Urban Council under Part 2 of the Housing and Town Planning Act, 1909. Mr. W. D. Soulsby, the clerk to the Seaton Delaval Council, said it was proposed to include 2,640 acres of the total of 4,454 acres in the development of the scheme. At Seaton Sluice and Old Hartley the council anticipated a popular seaside resort. At present there was old property in that district which might be in the way. A railway to Seaton Sluice would be opened in the near future. There were also signs of development in the colliery area. A new pit shaft was to be sunk at New Hartley, sixty-six houses had been erected, and plans had been passed for 130 houses. Mr. A. Dorin, the council's surveyor, and Dr. A. S. Taylor, medical officer of health, supported the application. In opposition evidence was given by Mr. Potts, architect for Lord Hastings' estate, by Mr. R. E. Ormsby, agent to the Seaton Delaval Coal Company, and Mr. J. S. Tweddell, manager of the Seaton Delaval Coal Company.

In the Council Chamber. Whitley Bay, Mr. George L. Pepler, Local Government Board inspector, held an inquiry on Friday into an application by the Whitley and Monkseaton Urban District Council for authority to prepare a town-planning scheme for the still undeveloped area in the district and partly within the urban district of Earsdon. Mr. A. Whitehorn, who appeared in support of the application, said the area of the land included in the town-planning scheme was 1,858 acres, and included 180 acres in the Earsdon urban area. In the past landowners had sought to develop their estates upon lines purely to their own advantage, and without any regard to the interests of the adjoining estate in particular or the district in general. The rigidity of the by-laws, which did not allow the local authority any discretion, had rendered them powerless to interfere. Mr. A. J. Roussel (surveyor to the Whitley Urban Council) gave details as to new arterial roads embodied in the scheme. Mr. T. Bertram (on behalf of the Earsdon Urban District Council) asked that the 180 acres of land in that council's area should be deleted from the scheme. He would give an undertaking that within six months his council would make an application for authority to prepare a town-planning scheme dealing with the area referred to. They approved of Whitley's scheme on general grounds, and would work harmoniously with them. No other opposition was offered to the application.

The results of the geological reconnaissance of the country between Cape Sorell and Point Hibbs, on the west coast of Tasmania, are given in Bulletin No. 18 of the Geological Survey of that State. Asbestos occurs in this area in a belt of serpentine rocks which outcrop on the southern shore of Macquarie Harbour, at a locality known as Asbestos Point, and a company has been formed to investigate the extent of the asbestos-bearing zone. Trenches cut across the deposit show ramifying veins of chrysotile asbestos varying in width from an inch down to a mere paper-like film. The asbestos fibre is of good quality, and is stated to compare favourably with Canadian asbestos.

In the June issue of *Man* Major A. J. N. Tremearne describes a new variety of head-measurer for use in anthropometry, and likely to be suitable for sculptors. It is intended to meet the prejudices of savages who do not fear to submit to an instrument of this kind so long as all the measurements can be taken from one single position. The new model has been improved under the advice of Professors A. Keith and Karl Pearson. Those who are interested in the subject can inspect the model at the Museum of the Royal College of Surgeons.

H.M. Consul at Milan (Mr. J. H. Towsey) reports that a Brescia firm of builders desires to secure the representation of United Kingdom manufacturers of fittings for villas and cottages, i.e., locks, bolts, flooring, roofing, etc. A booklet published by the firm

showing the scope of its work may be inspected by United Kingdom manufacturers at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, London, E.C. Further communications regarding the inquiry should be addressed to the British Consulate, Milan.

The *Gaceta de Madrid* notifies that tenders will be opened, at 11 a.m. on June 30, in the "Sala Consistorial," Castro Urdiales, for the construction of a hospital-asylum in that town, at an estimated cost of 121,622 pesetas (about £4,860). The same issue of the *Gaceta* also notifies that tenders will be opened, at 11 a.m. on June 30, in the "Sala Consistorial," Murcia, for the reconstruction of the provisions market in that town, at an estimated cost of 159,972 pesetas (about £6,400). Although the foregoing contracts will probably be awarded to Spanish firms, nevertheless the carrying out of the works may involve the purchase of some material outside Spain.

CHIPS.

Mr. Thomas McAuliffe has been appointed surveyor to the Listowel Urban District Council.

The urban district council of Mirfield, near Leeds, have purchased a site in Nettleton Road for the purposes of a housing scheme.

The Brighton and Hove Gas Bill, the Falmouth Docks Bill, and the London County Council (Tramways and Improvements) Bill were read a third time in the House of Commons on Thursday.

The town council of Godalming have decided to ask the sanction of the Local Government Board to a loan of £2,830 for waterworks extensions, this being the first instalment of a scheme which eventually may cost £20,000.

The Asylum Committee of County Mayo will consider at their next meeting plans, prepared by Mr. Butler, architect, for providing additional accommodation for 250 patients. The scheme will involve an expenditure of £27,010.

Mr. Sidney H. Morgan, of Prestwich Park, and surveyor to the Prestwich Urban District Council, has received a commission as second lieutenant in the East Lancashire Divisional Royal Engineers, at present stationed at Tunbridge Wells.

The Local Government Board, having given its sanction to the erection of the Thingwall Sanatorium being proceeded with on the grounds of public health, the Birkenhead Town Council has accepted a tender amounting to £7,993 for the erection of the building.

The Rector of St. Chad's, Ladybarn, has dedicated the new rectory which has been built for the parish at a cost of £2,100, from the design of Mr. W. Cecil Hardisty, architect, of Manchester. The new rectory adjoins the church in Mauldeth Road, which was opened in 1907.

Two pieces of wooden water or drain-piping were found on Friday on the Side, Newcastle-on-Tyne, opposite the Black Gate, by workmen who are engaged on a trench for the accommodation of new Post Office wires. The pipes are about two feet in length, and are made out of tree trunks, the water-flow being about three inches in diameter.

Gunner A. I. Richardson, of the 5th Battery Canadian Field Artillery, who has been killed in action, graduated from McGill University, Montreal, three years ago as an architect. He was on the staff of Messrs. Hogle and Davis, and of Messrs. Brown and Vallance, and on the outbreak of war left Saskatoon and joined the 21st Westmount Battery in Montreal.

The city council of Truro have received a letter from the Local Government Board stating that they were unable to sanction a loan for £24,300 for the carrying out of the scheme for sewerage and sewage disposal at the present time, but the corporation should proceed with the negotiations for a lease of the lands required for the purposes of the scheme.

Mr. Percy Booth, Montreal, is the winner of the George Creford Browne scholarship in architecture at McGill University, Montreal. This is of the value of \$500, one condition being that the holder travels for the study of his profession for not less than three months and reports the results of his study on his return. Mr. A. B. Darbyson, of Montreal, won the scholarship last year, the present being the second year of the competition.

The corporation of Greenock are inviting tenders for building 150 dwellings in Roxburgh Street.

The urban district council of Bispham have received the sanction of the Local Government Board to borrow £3,586 for electric lighting.

The Corporation of Doncaster propose to effect an important street improvement at the junction of St. Sepulchre Gate and West Laithgate.

Mr. Charles Horobin, acting engineer, has been appointed waterworks engineer to the Lincoln Corporation at a salary of £250 a year.

The Local Government Board have sanctioned the borrowing by the Ilkeston Town Council of £7,354 for the completion of the sewerage scheme.

The urban district council of Watford are seeking the sanction of the Local Government Board to the borrowing of £2,208 for private street works.

The Bristol Tramways Bill and the West Gloucestershire Water Bill, both of which have passed the Lords, were before the Committee of the Commons on unopposed measures on Friday. They were sent for third reading in the Lower Chamber.

The "Diario Oficial" (Montevideo) publishes a law approving the programme of works presented by the architect of the proposed new Government Palace at Montevideo. The total estimated value of the work on this building is 6,273,000 pesos (about £1,365,700).

The death is announced of Mr. R. W. Smith Saville, borough engineer of Darwen, after two months' illness. He had held his appointment since 1896, in succession to Mr. W. Stubbs, and had carried through the electrification of the tramways and other important schemes.

The urban district council of Milford Haven have instructed Messrs. Morgan, Davies and Partners to survey the impounding reservoirs of the waterworks and report on the work necessary to increase the storage capacity of the same by about 8,000,000 gallons.

Convalescent wards are proposed to be built at each of the four hospitals—Morton, Mastin Moor, Dronfield and Langwith—under the jurisdiction of the North Derbyshire Isolation Hospitals Committee. The estimated outlay on building and furnishing the annexes is £16,750.

A consulting engineer will be appointed by the city of Montreal to assist Mr. P. Mercier, assistant chief engineer, while Major Janin is on active service. The names of two local engineers, Mr. M. J. Butler and Mr. P. W. St. George, are being mentioned in connection with the appointment.

Mr. Alfred Drury's bust of Lieut.-General Sir Robert Baden-Powell, Immediate Past Master of the Mercers' Company, now on view at the Royal Academy, is destined for the Reception Hall at Mercers' Hall. The commission for the bust was given by the Court of the Company.

At the last meeting of the Torquay Waterworks Committee the engineer pointed out that a sum of £200 had been included in the estimates for purposes of afforestation, and asked for instructions as to proceeding with the work. The committee resolved to proceed with the re-planting of the trees at the proper season.

The death occurred suddenly from heart failure on Friday of Mr. John Perks, chairman of the Swadlincote Urban District Council, Burton-on-Trent, at the age of sixty-eight years. Death was due to a heart attack. Mr. Perks was consulting engineer to Messrs. Knowles and Co., earthenware manufacturers, with whom he had been associated for nearly forty years.

The architects engaged on the repair work on the boys' bath at "Cheetham's" Hospital, Manchester, experimented before waterproofing it. They report both the results of the experiments and of the work on the bath were successful. We now understand they are adopting the same waterproofer, "Pudlo," for work in connection with the Stockport Infirmary.

The death occurred on Monday, the 7th inst., at the age of fifty-nine, of Mr. Alexander Campbell, of the firm of John Laird and Sons, timber measurers, Port Glasgow, Cathmay, Denholm Street, Greenock. He had been associated with Messrs. Laird and Sons for about forty years, and since the death of Mr. John Laird had been managing partner. He leaves a widow and family of two sons and one daughter. His second son, who was assisting him in the measuring business, is second lieutenant with the Imperial Services Battalion of the 5th Argyll and Sutherland Highlanders, which left Dunfermline about ten days ago for abroad.

PROFESSIONAL AND TRADE SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION.—On Saturday se'night a party of the Edinburgh Architectural Association visited Gogar House, Corstorphine, by permission of Mr. J. E. B. Cowper, who conducted them over the house and gardens. The lands of Gogar were purchased in the sixteenth century from Logan of Restalrig by Adam Cowper, one of the clerks of session, and the house was built by his son John, whose initials and those of his wife are carved on various places on the building. During the eighteenth century the estate was in the hands of the family of Myreton. The house was built about 1626, and is an excellent example of a Scottish manor house of the time of King James VI. The entrance front, with its octagonal staircase tower, surmounted by an open balustrade, and its quaint dormers, is particularly interesting. The exterior has not been much altered since the date of its erection. The ground floor is vaulted, and the principal rooms are on the first floor. The upper floors contain a number of spacious rooms, with the original doors, fireplaces, and finishings characteristic of seventeenth-century design and workmanship. The party was entertained to tea by Mr. and Mrs. Cowper, after which Mr. T. F. Maclellan, A.R.I.B.A., president, proposed a vote of thanks to the host and hostess.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.—By the courtesy of the Baths Committee, the City Architect, Mr. Arthur Dale, invited the members on Thursday, June 10, to inspect the Muskham Street Baths. Mr. Dale first showed the plans and explained that the main problem to be considered was to erect a building to be used as a swimming bath for both sexes in the summer, and to be easily converted into a hall for meetings or cinematograph exhibitions in the winter. This necessitated careful planning of entrances and exits, etc. Mr. Dale conducted the party over the building, pointing out the movable floor framed on trestles and the dressing-boxes which neatly fold back on to the wall when the swimming bath is to be used for meetings. The heating and ventilating system was described and shown, the calorifiers and all pipes being in a well-lighted subway around the bath, thus being easily inspected and repaired at any time. Afterwards, by permission of the officer commanding, Mr. Dale took the party to the Meadow Schools, which his department have converted into a temporary hospital for wounded soldiers, and although not yet occupied, the buildings are now fitted up and are quite ready to receive patients at a moment's notice. Without unnecessarily interfering with the buildings, doctors' and nurses' rooms, lavatories, and X-ray room, and special sanitary apparatus have been fixed. The President, Mr. Harry Gill, conveyed the thanks of those present to Mr. Dale for taking them round, and complimented him and his staff upon the excellent planning and care shown upon all they had seen. Mr. Shelton endorsed this, and Mr. Dale suitably replied. The members were afterwards entertained to tea by Mr. Dale at Trent Bridge Cafe.

R.I.B.A. FUND. — THE EXAMINATIONS.—The Board of Architectural Education announce that the designs submitted by the following students have been approved:—Subject XX. (a) Facade for an Important Firm of Fine Art Publishers.—C. J. Brandon, J. C. C. Bruce, R. W. Carey, G. R. Cottingham, N. F. C. Day, R. A. Duncan, T. C. Evans, A. A. Foote, S. C. Foulkes, B. George, R. D. Graham, G. Hemm, V. Hull, L. D. H. Hutton, F. Jackman, A. D. Kellock, D. R. Lyne, G. Mungia, A. T. Owen, W. F. Pennington, T. Rayson, F. Reixa, F. J. Stevens, F. Trammer, G. B. Tubbs, J. Wilson, and F. P. M. Woodhouse; (b) Detached Swimming Bath for a Boys' Public School.—R. B. Hall, W. Holden, S. Knight, V. Middleton, E. W. Roberts, A. S. Tanner, and G. Vinden.

An inquiry will be held at Barrowford to-day, Wednesday, by Mr. W. O. E. Meade King into an application by the Urban District Council for sanction to borrow £2,250 for works of private street improvement.

MEETINGS FOR THE ENSUING WEEK

FRIDAY.—Institution of Water Engineers. Twentieth Summer Meeting at Burlington House, W. (1) "The Effect of Springs upon Water-levels in the Chalk of Eastern Surrey," by Henry Dewey, F.G.S. (H.M. Geological Survey). (2) "The Hydro-Geological Conditions of Newbold, East Yorkshire," by Percy Griffith, M.Inst.C.E., F.G.S. 3 p.m.

MONDAY.—Royal Institute of British Architects Presentation of the Royal Gold Medal to Frank Darling, of Toronto. 8.30 p.m.

TO ARMS.

Central London Regiment Volunteers.
4th Battalion "Architects."

RECRUITING.

Recruits are urgently needed for the Regulars, Territorials, and Volunteers. Intending recruits should apply to the Battalion Headquarters, where they will be advised as to the branch of the service for which they are best suited.

ORDERS FOR THE WEEK, by Lieut.-Col. A. W. Warden:—

267.—GENERAL PARADES.

Saturday, 19th inst., Boreham Wood. Parade at the Cricket Ground, 3.20. A few men are asked to attend at above on Saturday morning, under Sergeant Emerson. Bridge building.

ROUTE MARCH.

Sunday, 20th inst. Parade at Bromley South Station (S.E. and C.R.) 11.20 a.m., for route march to Orpington, etc. Trains leaving St. Paul's, 10.20, and Victoria, 10.35 a.m. Return to town about 6.15.

268.—DRILLS AND PARADES.

"A" Coy. Tuesday, Miniature Range, Gas Light and Coke Co.'s premises, Monck Street, Westminster, 5 to 8.30 p.m.

School of Arms and Signalling. Millbank School, Erasmus Street, Westminster, 6 to 8 p.m.

Wednesday. Company parade. 5.15 to 7.15 and 6.15 to 8.15, at Dean's Yard, Westminster. If wet, these parades will be held at Millbank School. Notice will be posted in vestibule at Headquarters.

Note.—There will be no Company parade on Friday at Dean's Yard.

For Recruit Drills see below.

Thursday. Signalling in Hyde Park, 6 to 8 p.m. Meet at Marble Arch, 6 p.m.

"B" Coy. Miniature Range and Company parade as for "A" Coy.

"D" Coy. Platoon and Section Drill at Mercer's School, Holborn, Tuesday and Thursday, 6.45 p.m. Company parade, Wednesday, at Dean's Yard.

RECRUITS.

A number of recruits are required to replace those recently joined the Regular and Territorial Armies, or who have obtained Commissions.

RECRUIT DRILLS.

"A" Coy. Dean's Yard, 5.15 to 7.15, Wednesdays and Fridays.

"B" Coy. Dulwich College. Mondays, 8 to 10. Thursdays, 6 to 8.

"C" Coy. Reforming, with new Headquarters. Applicants should apply to the Adjutant's Office.

"D" Coy. Mercer's School. Tuesdays and Thursdays, 6.45.

269.—SCHOOL OF ARMS.

Millbank School. Instruction will be given in bayonet fighting, gymnastics, physical drill, boxing, and single-sticks on Tuesday evenings, from 6 to 8 p.m.

CORRESPONDENCE.

Enrolment forms of new members and all correspondence not referring to recruiting for the Army or to financial matters must be addressed to the Adjutant, 10, Conduit Street, London, W.

Correspondence regarding recruiting for the Army and payment of subscriptions and accounts should be addressed to the Paymaster at Battalion Headquarters.

Members applying for Commissions in the Regular Army or Territorials are reminded that their papers should be sent in the first instance to the Adjutant's Office, when they will be forwarded to the proper quarter for signature. Applications should be accompanied by a letter from Members' Platoon Commander.

Battalion Headquarters, 18, Tufton Street, Westminster, S.W.

By Order, L. R. GUTHRIE, Adjutant.

A serious fire occurred on Sunday morning from an unknown cause at Dunrobin Castle, the Highland residence of the Duke of Sutherland. It started in the top floors of the south and west portions of the castle, and spread rapidly to the east wing and the north tower over the grand entrance; then it reached the second and third floors, and eventually much of the new part of the castle was gutted. Most of the valuables, including a large collection of pictures, were removed in safety, but a number of pictures and antique furniture was destroyed or irretrievably damaged. The enlargement and completion sixty years ago of the towers now partly destroyed alone cost £243,000. The castle was first built in 1697.

In February last the London County Council caused a claim for £50 to be made against the London Electric Railway Company, Limited, in respect of the use of the subsoil beneath the Shaftesbury Memorial Fountain, Piccadilly-circus. Both parties agreed to the claim being remitted to arbitration. The arbitrator has now published his award, under which the sum of £40 is payable to the Council. The company is liable for the Council's costs in the matter, it was reported yesterday (Tuesday) at the Council's meeting.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

Owing to stoppage of supplies all prices have advanced considerably.

IRON.

	Per ton.	Per ton.
Roller Steel Joists, English.....	£9 12 6 to	£9 17 6
Wrought-Iron Girder Plates.....	9 15 0 "	10 0 0
Steel Girder Plates.....	9 15 0 "	9 17 6
Bar Iron, good Stuffs.....	6 5 0 "	8 10 0
Do., Lowmoor, Flat, Round, or Square.....	22 0 0 "	0 0 0
Do., Welsh.....	5 15 0 "	5 17 0
Boiler Plates, Iron—		
South Stuffs.....	8 0 0 "	8 15 0
Best Snedshill.....	9 0 0 "	9 10 0
Angles, 10s, Tees 20s, per ton extra.		
Builders' Hoop Iron, for bonding, £12 5s. to £12 15s.		
Ditto galvanised, £19 to £19 10s. per ton.		
Galvanised Corrugated Sheet Iron—		

	No. 18 to 20.	No. 22 to 24.
6ft. to 8ft. long, inclusive gauge.....	£13 0 0 "	£13 10 0
Best ditto.....	13 10 0 "	14 0 0

	Per ton.	Per ton.
Cast-Iron Columns.....	£6 17 6 to	£8 10 0
Cast-Iron Stanchions.....	6 17 6 "	8 10 0
Roller-Iron Fencing Wire.....	8 5 0 "	8 10 0
Roller-Steel Fencing Wire.....	7 5 0 "	7 10 0
Galvanised.....	8 15 0 "	6 5 0
Cast-Iron Bash Weights.....	6 0 0 "	6 5 0
Cut Floor Brads.....	10 15 0 "	—
Corrugated Iron, 24 gauge.....	16 0 0 "	—
Galvanised Wire Strand, 7 ply, 14 B.W.G.....	14 5 0 "	—

B.B. Drawn Telegraph Wire, Galvanised—
0 to 8 9 10 11 12 B.W.G.
£10 10s. £10 15s. £11 Cs. £11 5s. £11 15s. per ton.

	Per ton.	Per ton.
Cast-Iron Socket Pipes—		
3 in. di meter.....	£6 15 0 to	£7 2 6
4 in. to 6 in.....	6 10 0 "	6 12 6
7 in. to 24 in. (all sizes).....	6 17 6 "	7 2 6
(Coated with composition, 5s. 0d. per ton extra.)		
Turned and bored joints, 5s. per ton extra.]		

Iron—
Cold Blast, Lillieshall..... 80s. 0d. to 127s. 6d.
Hot Blast, ditto..... 87s. 0d. " 97s. 0d.

	Per ton.	Per ton.
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2s per cent.)—		
Gas-Tubes.....	67½ pc.	
Water-Tubes.....	66½ "	
Steam-Tubes.....	60 "	
Galvanised Gas-Tubes.....	55 "	
Galvanised Water-Tubes.....	51½ "	
Galvanised Steam-Tubes.....	45 "	

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town.....	*£31 0 0 to	—
" Country.....	32 0 0 "	—
Lead Barrel Pipe, Town.....	*2 0 0 "	—
" Country.....	33 0 0 "	—
Lead Pipe, Tinned inside, Town.....	*35 0 0 "	—
" Country.....	34 0 0 "	—
Lead Pipe, tinned inside and outside.....	35 10 0 "	—
" Country.....	36 10 0 "	—
Composition Gas-Pipe, Town.....	34 0 0 "	—
" Country.....	35 0 0 "	—
Lead Soil-pipe (up to 4½ in.) Town.....	34 0 0 "	—
" Country.....	35 0 0 "	—
[Over 4½ in. £1 per ton extra.]		

	Per ton.	Per ton.
Lead, Common Brands.....	17 17 6 "	£ 8 12 6
Lead Shot, in 28lb. bags.....	24 15 0 "	—
Copper sheets, sheathing & rods.....	102 0 0 "	103 0 0
Copper, British Cake and Ingot.....	90 10 0 "	91 10 0
Tin, English Ingots.....	162 0 0 "	163 0 0
Do., Bais.....	163 0 0 "	164 0 0
Pig Lead, in 1 wt. Pigs, Town.....	23 0 0 "	24 0 0
Sheet Lead, Town.....	*30 10 0 "	—
" Country.....	31 10 0 "	—
Genuine White Lead.....	36 0 0 "	—
Refined Red Lead.....	31 0 0 "	—
Sheet Zinc.....	115 0 0 "	—
Old Lead, against account.....	25 0 0 "	—
Tin.....	9 5 0 "	—
Cut nails (per cwt. basis, ordinary brand).....	0 14 0 "	—

* For 5 cwt. lots and upwards.

SLATES.

	in.	in.	£ s. d.	per 1,000 of
Blue Portmadoc.....	20	10	12 12 6	1,203 at r. std.
" Bangor.....	16	8	6 12 6	" "
" ".....	20	10	13 2 6	" "
" ".....	20	12	13 17 6	" "
First quality.....	20	10	13 0 0	" "
" ".....	20	12	13 15 0	" "
" ".....	16	8	7 5 0	" "
Eureka unfading green.....	20	10	15 17 6	" "
" ".....	20	12	18 7 6	" "
" ".....	18	10	13 5 0	" "
" ".....	16	8	10 5 0	" "
Permanent Green.....	20	10	11 12 6	" "
" ".....	20	10	9 12 6	" "
" ".....	16	8	6 12 6	" "

LIST OF COMPETITIONS OPEN.

Nov 1—Port Extension, Christiania £555, £333, and £166 The Harbour Board, Akersgaten 55, Christiania.

LIST OF TENDERS OPEN.

BUILDINGS.

June 16—South Wimbledon Club, Repairs to, Wimbledon	"Repairs," Russell Road, Wimbledon.
" 17—Branch Post Office, Rebuilding, Threadneedle St., E.C.	H.M. Works Commissioners
" 18—Police Station, Repairs to, Little Haven	Pembrokeshire C.C.
" 19—Four Labourers' Cottages, Castlebar	Rural District Council
" 21—Premises, Alterations to, Northdown-road, Cliftonville, Margate	Timothy White and Co., Ltd. ..
" 21—Villa, Cullen	Councillor Harthill
" 21—Two Detached Houses, Moorhouse-lane, East Bierley	Moodey and Chrisfield, Archts., Station Gates, Broadstairs.
" 23—Central Electricity Works, Excavating and Underpinning	J. Christie, Architect, Banff.
" 23—Bakery, Paignton	A. T. Verity, Architect, Bradford-road, Birkenshaw, Bradford.
" 25—Repairs to Various Buildings, Kent	Corporation
" 25—County School, Repairs to, Fairlawn, Ashford	Co-operative Society, Ltd.
" 25—Council School, Repairs to, Rainham	Education Committee
" 25—Special Subjects Building, Repairs to, Hythe	Kent Education Committee
" 25—School, Repairs to, Hawkinge	Kent Education Committee
" 25—Post Office and Telephone Exchange, Tonbridge	Kent Education Committee
" 29—Labour Exchange, Canning Town, E.	H.M. Works Commissioners
" 29—Schools, Repairs to, and Painting, Leyton	H.M. Works Commissioners
" 30—Sanatorium, Highdown, High Style, Godalming	Education Committee
" 30—Eastern Fever Hospital, Repairs to, Homerton, N.E.	Metropolitan Asylums Board ..
" 30—Hospital and Asylum, Castro Urdiales	Metropolitan Asylums Board ..
July 5—Council School, Repairs to, and Improvements, Rainsgate .....	.....
" 5—School of Art, Repairs to, Margate	Sala Consistorial, Castro Urdiales, Spain.
" 8—Premises, Alterations to, Wrexham	W. H. Robinson, M.S.A., Archt., Sessions House, Maidstone.
No date—Pair of Small Villas, London Road, Kelvedon	W. H. Robinson, M.S.A., Archt., Sessions House, Maidstone.
do. —Temporary Hospital, Aldershot	Corporation
do. —House, Walby	J. England, Borough Engineer, Willow-road, Wrexham.
do. —St. James' Schools, Additions to, Thornes	J. W. Start, F.S.I., Archt., Colchester.
do. —Wesleyan School, Extension of, Dinnington	Fred C. Uren, Sur., Municipal Buildings, Aldershot.
do. —Two Houses, Norton, Doncaster	Dixon and Mitchell, Land Agents, Devonshire Street, Walby.
	W. Harold Watson, Archt., Barstow Square, Wakefield.
	W. J. Morley and Son, 269, Swan Arcade, Bradford.
	Pontefract Co-op. Ind. Soc., Ltd. Garside and Pennington, Archts., Pontefract.

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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Strand, W.C.

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OUR ILLUSTRATIONS.

Church of St. Wulfran, Abbeville, Normandy, from

an Etching in the Royal Academy Exhibition by Mr. Percy I. Westwood, A.R.I.B.A.
The Hall and Corridors, Tirley Garth, Willington, Cheshire. The late Mr. C. E. Mallows, F.R.I.B.A., Architect.
Lodge and Post Office and Lych Gate, Checkendon, Oxon. View with plans and section of Post Office. The late Mr. C. E. Mallows, F.R.I.B.A., Architect.
Detail Elevation of Nos. 3 and 4, Princes Street, W. Mr. W. Henry White, F.R.I.B.A., Architect.
Receiving Home for Children, Grimsby Workhouse. Selected design. Plans, elevation and section. Mr. T. Waddingham, Architect.

REFUSE DISPOSAL.

It cannot be said that the collection and disposal of the refuse of our towns is at all generally well carried out by the authorities. The collection is mostly faulty—generally because the contract system is still largely adhered to, which is disadvantageous in many ways. But even when carried out by municipal authorities themselves much is mostly left to be desired, too infrequent visits per house per week being paid, and too often, to the discomfort and peril of the inhabitants, the old-fashioned dust-carts being used, which lose a considerable percentage of their contents *en route* to their destination, to the annoyance of pedestrians. That method is still in favour not a bow-shot from this office in a narrow thoroughfare, down which, about 5 p.m., especially when the north-east wind is blowing, it is impossible to walk without being half-smothered, and which remains littered by débris for hours after the cart has left. That any but a covered vehicle should still be allowed is as marvellous as our placid content, the fruit of our preference for "British Freedom" as compared with "German organisation," which still tolerates man and horse scavenging, while in Berlin the roads are simultaneously watered and cleansed by motor street-cleaning machines.

The disposal of refuse is scarcely much better performed. Some towns, such as Dover, Newcastle, and Sunderland, still barge all or part of their refuse out to sea, a most objectionable method every way. It is costly, the loading of the barges is an intolerable nuisance, and there is always the danger of much of the refuse being washed ashore, to the damage of health and the disgust of visitors. Conversion into manure has its advantages in districts where the farmers will take it, which, as at Ross, in Herefordshire, they will not, at half-a-crown a load, the result being that occasionally the town has as much as five hundred loads awaiting removal. Dumping the refuse at a distance is costly and often impracticable.

Destruction by burning is probably the safest and best plan, and would ere this have become more general but for the facts that the selection of a suitable site for the destruction is often difficult and costly, and that the expense of upkeep is heavy, and the choice of the most suitable type of destructor is not always an easy one. Added to which, some of the early destructors were such nuisances that the system got a bad name, which still clings to it to some extent. The result is that those whose duty it is to advise health committees are often handicapped by the difficulty of selecting a suitable destructor

and of convincing members of the fact that all, at any rate, are not nuisances. It may be added that the difficulty of selection is enhanced by the fact that a destructor which answers very well in one neighbourhood will prove far less satisfactory in another. The calorific value of the refuse varies greatly. "The poorer the district the richer the refuse"—especially as regards cinders, while in others the vegetable refuse—especially in summer time—largely predominates.

All the considerations we have mentioned and others have been carefully dealt with in a useful manual on "Refuse Disposal," by Mr. Ernest R. Matthews, Chadwick Professor of Engineering in the University of London, and published at six shillings by Messrs. Charles Griffin and Co., Limited, Exeter Street, Strand, W.C., and we can recommend it to all interested, especially to municipal engineers and local councillors. Methods of collection are dealt with in the first chapter, unsatisfactory methods of disposal in the second, and the conversion of refuse into manure in the third. Destruction by burning, which Mr. Matthews naturally favours, occupies six succeeding chapters, in which the different types of destructors are impartially described and discussed. The rest of the volume deals with the advisability of putting in installations for villages, workshops, hospitals, etc.; the uses for the clinker; and chimney construction. The last chapter, which is devoted to suction cleaning in large buildings, is a very timely one. It often surprises us, when called upon to inspect buildings like theatres, hospitals, hotels, stores, banks, churches, schools, and large residences to find that no provision for preventing the accumulation of dust has been made by the architect. In the United States the suction system of removal prevails to a far greater extent than here. It is not costly, the expense of installation ranging from £150 in a large residence to about £400 in the case of a large public building. The comfort of being able to remove the all-prevalent dust at frequent intervals from carpets, upholstery, bedding, etc., and from the more or less smooth surfaces, such as walls, ceilings, and decorations, without disturbance is most marked, while the commercial gain to merchants and others interested in large stores is immense. Apart altogether, also, from the comfort of their individual clients, architects must know that the time is not distant, now that town planning is coming, when every building will be connected up to a suction main, which will lead to the destructor, and that all refuse—and that most dangerous refuse,

dust, with it—will be drawn by suction to its destination.

Taking things as we have them to-day, the initial cost of a destructor, both as regards site and plant, is high. According to a useful table Mr. Matthews inserts, the initial cost of buildings and plant varies from £2,159, as at Sowerby Bridge, to £5,919, as at Yeovil. The cost of burning, including wages, varies from 9d. to 2s. 8d. per ton. In a modern destructor of good type it certainly should not exceed 1s. 2d. per ton. There are, perhaps naturally, comparatively few makers of destructors, the respective merits of which must be estimated by readers from the eight valuable detailed drawings and ninety-one other illustrations Mr. Matthews gives. Some of these are complete plans of destructor works, and will be of very great service to local authorities and their officials concerned.

PULPITS, LECTERNS, AND ORGANS IN ENGLISH CHURCHES.*

This is the ninth volume of the informative series on Church Art in England, all edited, and with this exception written, by Mr. Francis Bond. All are profusely illustrated, chiefly from photographs, a few sketches and measured drawings being interspersed, and all are clearly printed on stout paper, strongly bound and attractively got up in the format characteristic of the Oxford University Press. The work before us is penned by the Rev. Dr. J. Charles Cox, the author of many books on ecclesiastical subjects, and it is marked by the painstaking accuracy and the wide range of scholarship associated with the author's name. The only monograph on pulpits hitherto published has been F. T. Dollman's "Examples of Ancient Pulpits," issued in 1849, and long since out of print.

In his preface the author seeks to correct several popular delusions. He points out that the bounden duty of preaching was insisted upon with constant iteration by the mediæval Church, and was by no means a special appanage of the Reformation period. Again, in England sermons were almost always preached in the vernacular, and not in Latin. With the Reformation came about a remarkable cessation or reduction of preaching. Another common notion that mediæval pulpits were of exceptional occurrence, the sermon being generally delivered from the altar or chancel steps, is disproved by the numerous instances in which

* "Pulpits, Lecterns, and Organs in English Churches" By J. Charles Cox, LL.D., F.S.A. Demy 8vo, cloth, 228 pages, with 155 illustrations from photographs and drawings. 7s. 6d. net. (London: Humphrey Milford, Oxford University Press, Amen Corner, E.C.)

churchwardens' accounts of pre-Reformation date are still extant, and the inventories of church goods by the Commissioners of Edward the Sixth's days bear witness to the universality of pulpits. The stone pulpits of pre-Reformation date yet extant described in the volume before us number upwards of sixty, and are chiefly to be found in Somerset, Gloucester, and Devon. Medieval pulpits of wood, chiefly of fifteenth-century date, remain in about one hundred parish churches, but this number includes several cases in which old panelling has been used in repair or reconstruction. The post-Reformation pulpits up to about 1700 are, with few exceptions, all of oak, and are, as might

side or the other of the chancel screens, but was occasionally attached to a pier on either side of the nave, more often on the north or gospel side, though not in any marked degree. In a few instances wall stairways, like those to refectory pulpits, occur in parish churches. The author deals county by county, in alphabetical order, with medieval stone and wooden pulpits, and the oaken ones of between the period of the Reformation to the days of Queen Anne. Devonshire possesses no fewer than ten Late Medieval stone pulpits, octagonal in plan with one exception (that in St. Saviour's at Dartmouth), and in many cases elaborately sculptured; the oldest of these is that at South Molton,

There are at least one hundred pre-Reformation pulpits of oak; the largest number are to be found in Norfolk, closely followed by Devon. Halberton, with its two tiers of recessed panels, is one of the earliest (c. 1420) and finest. The author points out that the so-called Wycliffe pulpit at Lutterworth was constructed about 1450, whereas 'the Reformer was rector of the parish nearly a century earlier, from 1374 till his death in 1384. The finest carved fifteenth-century pulpit is that at Trull, near Taunton; it is ornamented with large statuettes of St. John the Divine and the Four Doctors of the Church. Suffolk possesses three old oak pulpits of some celebrity, besides many others of interest, viz., the octagonal example at St. Edmund's, Southwold; that at All Saints', Sudbury, which came to light in 1847 after having been concealed for centuries by deal boarding; and the fine Late Perpendicular one at Hawstead.

The post-Reformation oak pulpits are very numerous, and of great interest and variety. A fair number of the seventeenth-century examples retain the well-carved testers or canopies, and those of later date the great sounding-boards; but many a foolish parson has demolished the sounding-board to use it as a vestry table, and in one instance it now does duty in the rectory as the dining-table. Complete examples of three-deckers are to be seen at Sall, Minstead, Downham, St. Leonards, Icklingham, and Ronaldkirk. Nearly all churches built or rebuilt between 1700 and 1830 had their pulpits centrally placed, obscuring or hiding the altar. Herefordshire has some good examples of seventeenth-century pulpits. That in All Saints' Church, Hereford, is a two-storied Late Jacobean, 1621, and is shown in Fig. 2, from a photograph by Dr. G. Granville Buckley, one of two illustrations of this example in the book before us. It is hexagonal in plan. The panels, divided by Classical pilasters, are arcaded below, but are squared with mouldings. Below the cornice is a strip of strapwork, and in the centre of each panel is a short piece of vine trail. The handsome hexagonal tester is not supported by any back-piece or standard connected with the pulpit, but is simply attached to the wall. In the churchwardens' accounts we read: "Item—payed the Asyners for their Tymber and workmen their labour the Pulpit—viii£." There are many good pulpits of the seventeenth century to be seen in Hertfordshire churches and also in those of Nottinghamshire, Salop, Somerset, and Suffolk, but they are comparatively scarce in Norfolk, notwithstanding its very numerous churches.

An interesting chapter is devoted to hour-glasses, which came into use in the sixteenth and seventeenth centuries. A good many hour-glasses were unfortunately destroyed during the heedless restoration of the earlier Victorian period, but Dr. Cox shows that about a hundred stands still survive, as well as at least a dozen actual glasses. The author points out that the sermons so regulated were not necessarily of an hour's duration, since some of those that have been printed could not have occupied in delivery longer than half an hour or twenty minutes, but the sand-glass suggested a limit beyond which no self-respecting preacher could expect to retain the attention of his hearers. The constructors of these glasses were not always careful in their sand measurements. An old hour-glass which used to be placed in an East Anglian pulpit was repeatedly tested, and always chronicled forty-eight minutes.

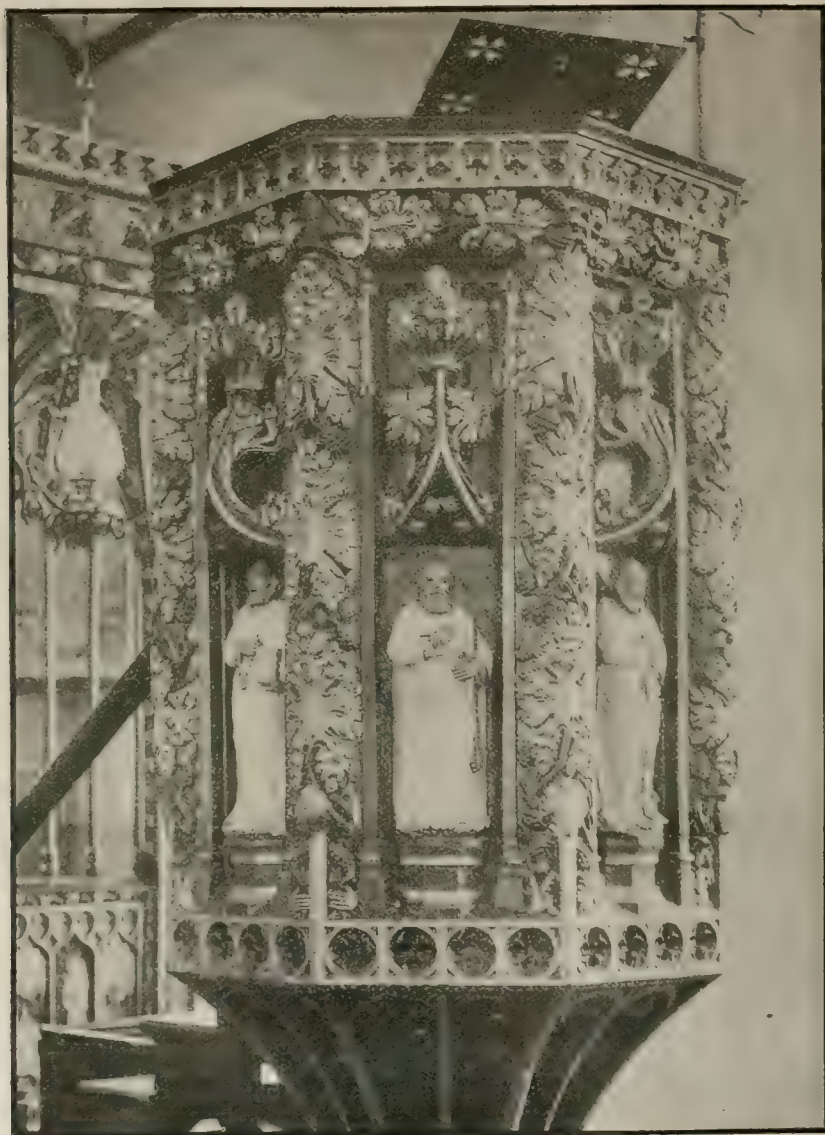


FIG 1.—STONE PULPIT, HARBERTON, DEVON.

be expected, far more numerous than the medieval examples. They abound in Northants and Notts, but several northern shires are almost destitute of Late Tudor or Stuart instances. "When complete," says Dr. Cox, "the pulpit, tester, and pedestal in Late Elizabethan, Jacobean, or Carolean compositions often form an imposing ensemble; but ignorant restorers have not infrequently marred the whole effect by the removal of the canopy or sounding-board. Other parsons or would-be architects deliberately mar the effect of an old post-Reformation pulpit by placing it on a white stone base; while in fully a score of cases beautiful and cunningly carved pulpits have been ruthlessly ejected from the church."

The position of the medieval pulpit varied greatly; generally it stood on one

c. 1450. In Somerset there are a score old stone pulpits, of which the early one, Shepton Mallet (c. 1460), is perhaps the finest. There are also many instances of great interest in Gloucestershire. The only example in Staffordshire is the elaborated and enriched one in the great collegiate church of St. Peter at Wolverhampton, probably the most notable one in the kingdom.

We reproduce by the publishers' courtesy in Fig. 1 a photograph by Mr. W. Percival Wiseman of the richly sculptured stone pulpit in the fine Perpendicular church at Harberton, near Totnes; the stonework has been gilded and coloured, but the tooling is coarse and has become abraded. The niches are occupied by apostles' figures. The pulpit was restored in 1871.

In a chapter upon lecterns the author shows that, until the Reformation, this feature retained its original and proper position in the choir. Throughout the Middle Ages the eagle, the symbol of St. John the Divine, was the favourite emblem wherewith to crown the lectern used for gospel reading purposes. There was a revival of its use in the seventeenth century, more especially after the Restoration. The extant eagles are chiefly of the fifteenth and early sixteenth centuries; the earlier ones, except a few of the fourteenth century, seem to have perished. The largest and finest eagle in England is that in St. Paul's Cathedral; it measures 8 ft. 6 in. in height, and has a breadth across the wings of 3 ft. 3 in. The maker was John Sutton; he was paid for it £241 15s. Wooden eagle lecterns were more common in England in Mediaeval days than those of brass, but, owing to the perishable character of the material, there are only twenty old examples, as compared with about fifty in metal. A fine example of an oak eagle, with truncated beak and stiffly outlined wings, is the one at Astbury, Cheshire (Fig. 3)—another reproduction of one of Dr. Granville Bradley's photographs. The use of a reading-desk at the east end of the nave, introduced at the beginning of Queen Elizabeth's reign, nearly died out at the end of the nineteenth century, and but few examples now exist. Sometimes the reading-pew had double desks, so that the minister could face either west or south, but, as a rule, they were set with their backs to the altar. There are still some instances of the desks in churches upon which rested chained books for the use of private readers. The author shows that the chaining of books in churches was usual long before the Reformation, and points out that with the close of the seventeenth century the custom of chaining volumes came to an end.

The interesting subject of organs and organ-cases is somewhat cursorily dealt with by Dr. Cox; if it were introduced at all in this volume, it should have been more fully treated. The author principally confines his attention to the early use of organs in England, and proceeds to refer to a few of the more remarkable of the older cases. Fig. 4, from a drawing by Mr. Maurice B. Adams, shows the beautiful organ-case in the fine parish church of Framlingham, East Suffolk. The case was built in 1674 by Thanar, of Peterborough, for the chapel of Pembroke College, Cambridge, and stood in that building until 1708, when the Master and Fellows presented it to the church. The organist's seat is screened off by scroll-work of exquisite Renaissance design.

The volume is carefully written and revised, and there are but very few of the apparently unavoidable printer's errors. Two we note on the same page, 32, where the architect F. T. Dollman (1812-99) is spoken of as T. T. Dollman, and Chipping Sudbury appears as Chipping Sudbury, a misspelling repeated on page 218. The excellent and complete indices of places and subjects form useful appendices to the volume, which will be prized by the architectural student and be invaluable to the ecclesiologist and antiquary.

The town clerk of Doncaster has officially announced that the Corporation Bill has received the Royal Assent in Parliament. The measure confers important powers upon the corporation. It provides for municipal buildings at a cost of £30,000, an isolation hospital (£35,000), street improvements (£50,000), and the extension of the gasworks and mains at a cost of £65,000. Roughly speaking, an expenditure of £200,000 is provided for.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

PRESENTATION OF THE ROYAL GOLD MEDAL.

The closing meeting for the present session of the Royal Institute of British Architects was held at 9, Conduit Street, W., on Monday evening, when, for the first time since its formation in 1848, the Royal Gold Medal for the promotion of Architecture was conferred upon a citizen of one of the great Dominions in the person of Mr. Frank Darling, of Toronto. Unfortunately, the occasion was shorn of much of its interest by the fact that the war had rendered it impracticable for Mr. Darling to come to receive the

but other speakers showed a tendency to break off to the painful topic of the hour.

TWO RECENTLY DECEASED WIDELY KNOWN ARCHITECTS.

Mr. E. Guy Dawber, hon. secretary, said he much regretted to announce the death of Mr. John Macvicar Anderson, past president, who until the last few years had taken a prominent part in the various activities of the Institute. He moved a resolution expressing the grateful appreciation by members of the services rendered by the esteemed past president, Mr. Macvicar Anderson, and directed that a message of sympathy and condolence be conveyed to the widow and family. The motion was passed by the members silently rising in their places. The

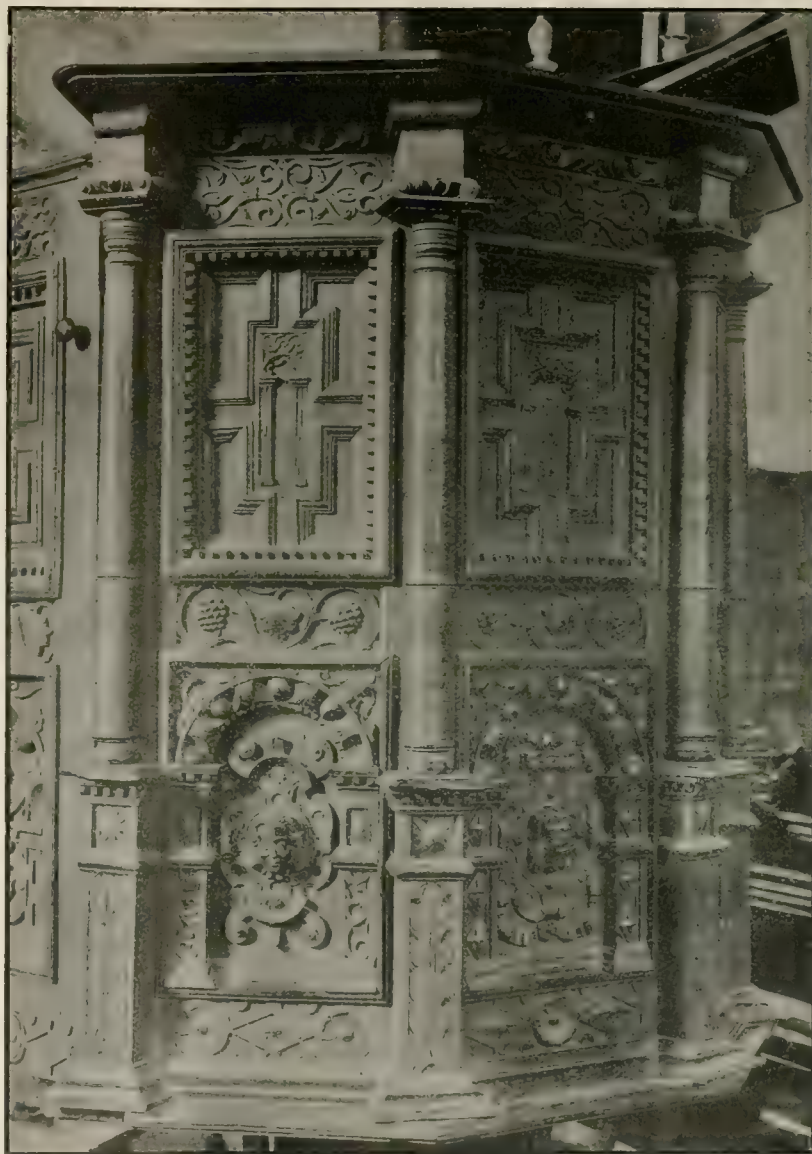


FIG. 2.—LATE JACOBEOAN OAK PULPIT, ALL SAINTS, HEREFORD.

high honour in person. The meeting room was, however, well filled.

Mr. Ernest Newton, A.R.A., the President, occupied the chair, and those present included Sir Aston Webb, R.A., Sir T. G. Jackson, R.A., Sir Ernest George, A.A.A., Messrs. Reginald Blomfield, R.A., Basil Champneys, and T. E. Collcutt, Royal Gold Medallists; Mr. H. Austen Hall, President of the Architectural Association; the Hon. Sir George H. Perley, High Commissioner for Canada; the Hon. W. P. Schreiner, C.M.G., High Commissioner for South Africa; the Hon. W. T. Mackenzie, High Commissioner for New Zealand, with most of the members of the Institute Council, and a large number of visitors, including many ladies. The President's address was terse and pointed.

hon. secretary said he had further to announce with regret the decease of the distinguished American architect, Dr. William Robert Ware, who had been a corresponding member of the Institute for thirty-five years. Dr. Ware had won distinction not only as an architect but as a teacher of architecture. He was the designer of many important buildings in the United States, and had held the position of Professor of Architecture, first at the famous Massachusetts Institute of Technology and afterwards at Columbia University. A vote of sympathy with Professor Ware's recent admirers having been expressed, Mr. Guy Dawber further mentioned the deaths of two licentiates, Messrs. William Robert Osborn and Samuel Cooper Stephens.

THE ROYAL GOLD MEDAL AND ITS RECIPIENT.

In making the formal presentation the President observed that the Council of the Royal Institute examined very carefully the claims of the eminent men whose position would seem to entitle them to this distinction, and having made their selections they submitted the name they proposed to his Majesty for his approval. The first medal was presented in 1848 to Mr. Charles Robert Cockerell, and the recipient last year was Monsieur Jean Louis Pascal. On this list will be found the names of distinguished men of many countries, but there is one thing that is new in connection with the presentation to-night, and that is, that for the first time in its history the Gold Medal is pre-

of work which has passed through his hands:—Toronto.—General Hospital, Canadian Pacific Railway Building, Royal Ontario Museum, Buildings for Toronto University, Bank of Nova Scotia Office, Dominion Bank Office, Union Bank Office, Standard Bank Office, many private houses. Winnipeg.—General Post Office, Grain Exchange, Union Bank, Nova Scotia Bank, Imperial Bank. Montreal.—Sun Life Office. He has also built an office for the Canadian Bank of Commerce in almost every important city in Canada. Well, it is, I think, a peculiarly happy coincidence that we are here doing honour to a great Canadian artist, one of the leaders in the arts of peace, while his gallant fellow-countrymen on the battlefields of Europe are

on behalf of his friend Frank Darling, through whom a signal compliment was being paid to the whole Dominion of Canada, of whose Government the speaker was a member. He regretted exceedingly Mr. Darling was not able to be present to accept this high honour in person, for he knew they would all like him if they came in contact with him and saw him. Mr. Darling had sent that day to the President and Council of the Institute the following cablegram, which the President had asked him to read:

Gentlemen,—I was more than surprised when your Secretary's letter arrived informing me that the Council of the R.I.B.A. had nominated me for the Royal Gold Medal for 1915. The bestowal of such a signal honour, unlooked for and totally unexpected, leaves me at a loss to express adequately my thanks and appreciation of the compliment paid me, and, through me, to the profession of which I am a member and to the country of which I am proud to be a citizen. I am a Canadian born and bred, and an Imperialist from the bottom of my heart. I welcome everything that tends to bring more closely together the Mother Country and the Great Dominions beyond the Seas, and can think of nothing better calculated to help bring about in its own way such desirable result than this gracious action on the part of the Institute. That a body of such eminence as the R.I.B.A. should have singled out Canada as the first of the Overseas Dominions to receive the Gold Medal will, I know, be valued by the architects of this country as a very great honour paid to a profession not hitherto overburdened with public recognition, though striving manfully to uphold often against very adverse conditions the standing and dignity of the profession. As to myself, you value, I fear, too highly whatever I may have done in this direction. As for my architectural work, surrounded as you are by the masterpieces of our art, I have to thank you very cordially for the kind and lenient eyes with which you have looked upon it. You do me, gentlemen, far too much honour. I wish very much I could have seen my way clear to have gone across and received the medal in person. In not doing so I trust you will acquit me of any discourtesy, but as you all know only too well things are not normal and the world is out of gear, and I find it quite impossible to manage it. Again I have to thank you for your kindness in electing me a Fellow of the Institute, an honour I deeply appreciate and highly value. To be a member of your Institute is a distinction I have long coveted.—Yours very faithfully, FRANK DARLING.

Proceeding, Sir George Perley remarked that Mr. Darling had not been in robust health for several years past, and his inability to cross the Atlantic was probably due in large measure to that reason. The photographs on the walls would point something of the character of Mr. Darling's executed work, much of which he thought evinced high merit, and some might be characterised as more than brilliant; but he might add that Mr. Darling's name was known and honoured throughout Canada as that of one who strove worthily to uphold the honour of the profession. Probably they knew that the seat of the Canadian Government, Ottawa, was connected across the river with the manufacturing city of Hull. It had been the speaker's wish for some years that the amenities of the two cities should be maintained and improved. Two years since the Government had appointed a small but influential commission to prepare a town plan, to which future roads and buildings in the cities should conform, and on the speaker's nomination Mr. Darling was selected as the member of that commission to represent the profession in Canada. On his friend's behalf, he esteemed it a great honour to accept and forward the medal.

Mr. Reginald Blomfield, R.A., ex-President, proposed a vote of thanks to Sir George Perley. The Hon. W. P. Schreiner, in seconding the vote of thanks, said representatives of all the dominions felt gratitude that the claims to distinction of a Canadian architect had been recognised by the senior and leading architectural body in the world—a gratitude which took the form of a lively sense of favours to come, for now that a precedent had been established he might suggest that in other dominions, and notably in South Africa, there were distinguished architects in practice whom the Royal Institute would do well to recognise in the future.

The motion was carried by acclamation, and in responding Sir George referred to the open competition the Canadian Government had instituted for additions to the Parliament Buildings in Ottawa. He trusted that the selected design would be worthy of the picturesque site and of the existing edifice to which it would form an adjunct.



FIG. 3.—OAK EAGLE LECTERN, ASTBURY.
(From Dr. Cox's "Pulpits, Lecterns, and Organs.")

sented, by the unanimous vote of the Council and members of the Royal Institute of British Architects, and the approval of his Majesty, to a Canadian architect. I hope that in the future it may be presented to eminent men of the other great overseas Dominions and Commonwealths. Mr. Darling was born in Ontario in 1850 and had his first introduction to architecture in a Canadian office. At the age of 20 he came to England and worked under Mr. Street and Sir Arthur Blomfield. He began his career as an architect in Canada in 1875. His works are known to most of us only through the medium of drawings and photographs; some of us have had the privilege of seeing the actual buildings: I regret that I am not of the number. On the walls are hung photographs of many of Mr. Darling's works. The following list will give you some idea of the amount

showing their magnificent qualities in the arts of war. We are only allowed glimpses now and then of the noble deeds performed by all the splendid troops of the Empire, but it seemed as if the history of the gallant stand of the Canadians on that memorable day, not many weeks ago, could not be held in the iron grip of the Censor, but had to be told. Sir George Perley, in presenting this Medal to you as representing Mr. Frank Darling, will you, when the time comes for handing it to him, express to him our admiration for his work and our keen interest in the great Dominion which counts him as one of her distinguished sons; and will you also tell him that in honouring him with this distinction we are also honoured by the addition of his name to our roll?

Sir George Perley said he esteemed it a great honour to receive so high a distinction

4TH BATTALION ("ARCHITECTS") CENTRAL LONDON REGIMENT VOLUNTEERS.

During the last nine months all professions, trades, and callings have identified themselves with the work of our Army. Some 2,000 members of the architectural profession are now serving with the colours, and others, who for one reason or another are unable to enlist, are serving their country at home in scarcely less useful ways.

Early last autumn, as the result of a conference initiated by the Royal Institute of British Architects, at which all Architectural Societies were represented, after considering the best manner in which the resources of the profession could be utilised, the work of forming a war service bureau was delegated to the Architectural Association, and to it was entrusted recruiting for the Army and the training of Volunteers. To secure united action in these important directions the committee of the Volunteer Training Corps then formed approached the Surveyors' Institution, the Auctioneers' and Estate Agents' Institute of the U.K., the London Master Builders' Association, and the Junior Art Workers' Guild, and a recruiting agency (later recognised by the War Office) was started at 18, Tufton Street, Westminster, S.W.

Between 750 and 800 men have passed through this agency into the forces; some 600 men have now been trained in the corps, from which many men, unable at the beginning of the war to enlist, have now joined the Army with the advantage of commencing their career with a knowledge of drill and military discipline.

The successful organisation of the corps and its proved usefulness more than justifies an increase of its numbers, to which end a new company is being recruited, the headquarters of which will be at the Central Electric Supply Company's generating station, Lodge Road, St. John's Wood, N.W. The headquarters of the corps are at the Architectural Association, 18, Tufton Street, Westminster, S.W., and local headquarters have been established at Dulwich College, the Mercers' School, Holborn (by kind permission of the masters), and at the Architectural Association Sports Ground, Boreham Wood, Elstree. Further drill centres will be arranged for new platoons in localities most convenient to members.

Some idea of the thoroughness and practical nature of the training can be gathered from the following summary of instruction given:—School of arms, gymnastics, physical drill and bayonet fighting, squad and company drill, musketry instruction (firing on miniature range), signalling and field engineering, and cyclists', scouts', and ambulance work. Week-end and other camps are held periodically, at which advanced practical training in military work is given. The field engineering section recently erected a bridge 72 ft. long in seven working hours. In addition to company and extended order drill, the members are instructed in marching by compass, map reading, route marching day and night outposts, and long-distance signalling.

At the Easter camp the corps were in billets in Epping Forest, and at Whitsuntide a most successful camp was held under canvas in Ashdown Forest, where the whole of the catering, cooking, and other camp duties were carried out by the members. The transport was most efficiently performed by the battalion transport section. It is proposed to hold another camp under canvas at the end of July and beginning of August, at which combined training with other battalions of the Central London Regiment (Volunteers) and many other corps will be held to complete and improve the value of the training and instruction already received. At each camp the Post Office Engineering corps Volunteers, whose members form a highly efficient signalling company of Engineers, co-operated, and greatly added to the interest of the training.

Every section of the corps by its keenness and its efficiency reflects great credit on the activity and unceasing efforts of its officers, amongst whom the corps is to be congratulated

in the possession of its commandant, Lieut.-Colonel Warden, of the Indian Army (retired), and of its sub-commandants, C. Stanley Peach and Major Monson, and its Adjutant L. R. Guthrie, and many other well-known men. The corps is urgently in need of recruits to make up for the depletion of its ranks caused by men who have passed through it to more extended spheres of usefulness in the Regular and Territorial Forces of the country, and to carry on and extend the work of recruiting and training men for these Forces. All members of the architectural and surveying, auctioneers' and estate agents' professions, and the building and allied trades are eligible. Enrolment forms may be had on application to the Adjutant's Office, 10, Conduit Street, W., and should be returned to the Adjutant on completion.

attainment of that period of total service under the Council, be allowed to become contributors (subject to age qualification as hereinbefore).

2. That special consideration on retirement be given to the case of officers of long service who by reason of being above the age limit hereinbefore referred to are compelled to retire without having been able to participate as contributors to the fund.

In the first instance, the committee added, they had given consideration to the position of the unestablished staff in the architect's department, which contains a far greater number of persons concerned in the memorial than any other department. The report and recommendations were therefore drawn so as to apply in the first instance only to the unestablished staff of the architect's department. They considered, however, that their proposals, if adopted, should be extended from time to time, so as to cover officers em-

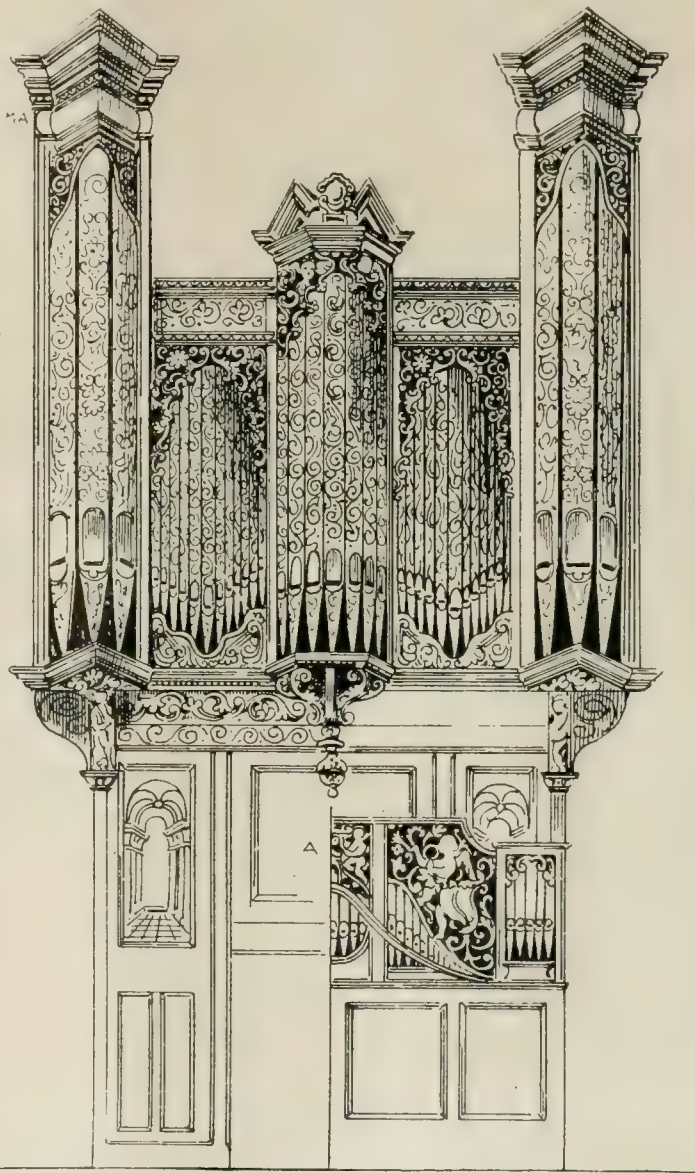


FIG. 4.—ORGAN CASE, ST. MICHAEL'S CHURCH, FRAMLINGHAM.
(From Dr. Cox's "Pulpits, Lecterns, and Organs.")

THE "UNESTABLISHED STAFF" OF THE ARCHITECT'S DEPARTMENT, L.C.C.

At the meeting last week of the London County Council, the General Purposes Committee reported that they had given consideration to a petition from the unestablished staff of the Council, referring to their position under the National Insurance Act, 1911, and their admission to the Council's superannuation and provident fund, and submitting suggestions as follows:—

1. (a) That unestablished officers of three years' service, and whose age at the time of application shall not exceed a limit to be determined by the Council, shall be entitled to become contributors to the superannuation and provident fund.
- (b) That unestablished officers who have not yet served for the qualifying period shall, on the

employed under similar conditions in other departments. In the architect's department there are on the unestablished staff some 360 persons who have been in the service for varying periods, some having been transferred when the School Board for London was discontinued in 1904. Very few, however, have been permitted to contribute to the superannuation and provident fund. The committee did not deem the present a suitable time, however, to discuss or deal with the admission to the benefits of the superannuation and provident fund of the members of the unestablished staff, many of whom are on war service and receiving civil pay under the Council's war service regulations, and they proposed, therefore, to defer until after the conclusion of the war the question of the

superannuation of those at present on the unestablished staff, and who have already had considerable service. It is against the best interests of the Council and of its employees that men should be allowed to remain for long periods in what may be described as more or less temporary employment. The evil of continued temporary employment of individuals has been recognised by the Establishment Committee, who by rule have prescribed that no person under their direction shall be temporarily employed for a longer aggregate period than three years, and a scheme has been devised whereby a modification of this policy shall be applied to the unestablished staff.

In the first place, however, it was desirable that the term "unestablished staff" should be clearly defined, and the General Purposes Committee proposed that the definition shall mean and include persons who (i.) are employed on professional or technical work which will continue for more than three years, but for which provision is not made in the fixed staff; and (ii.) either have technical or professional training or qualifications or have qualifications peculiar to the requirements of a particular department. A definition of the term having been framed, the Committee had devised a system wherein provision was made for the method of selection and conditions of service of the class and for retention in what may be regarded as continuous employment of those in it who, within a fixed period, qualified therefor. The scheme was embodied in the standing orders submitted in the recommendation (a) and would prevent a recurrence in the future of the conditions now obtaining with regard to the unestablished staff of the architect's department.

If these proposals were adopted the employment of unestablished staff in the architect's department would, the Committee believed, be put upon a sound basis. The Committee would, after the conclusion of the war, consider the position as regards membership of the superannuation fund of the members of the present staff with considerable service. They recommended:—

(a) That the following be standing orders of the Council:—

(i.) "Unestablished staff" means and includes persons who (i.) are employed on professional or technical work which will continue for more than three years, but for which provision is not made in the fixed staff; and (ii.) either have technical or professional training or qualifications or have qualifications peculiar to the requirements of a particular department.

(ii.) Upon the occurrence, on the fixed staff, of a vacancy for a technical or professional officer, the Establishment Committee shall consider the particulars of service of members of the unestablished staff who have been continuously employed for ten years and possess the necessary technical qualifications for such vacancy, and the Establishment Committee shall prescribe what, if any, general conditions shall be fulfilled in the case of such appointments to the permanent staff.

(iii.) The method of selection and conditions of service of persons to be engaged upon the unestablished staff and the manner in which their engagement may be terminated shall be prescribed by regulations made on the recommendation of the Establishment Committee.

(iv.) Persons entering the unestablished staff on or after October 1, 1914, shall not be retained in the service if within five years of entry they have not obtained the technical qualifications prescribed by the Establishment Committee.

(v.) The standing order shall apply only to the architect's department.

(b) That employees in departments other than that of the architect who conceive that the terms of their employment cause them to come within the definition of "unestablished staff" be invited to make, not later than December 31, 1915, representation with a view to the application to them of the proposals embodied in the foregoing resolution (a).

This report and its recommendations were agreed to in their entirety by the Council.

At Longleat, near Poole, the Church of St. Mary has been reopened after enlargement at a cost of £26,000. The architect was Mr. H. Kemell, and the contractors were Messrs. Peabody and Son of Bridgewater.

Plans have been adopted by the Melbourne Harbour Commissioners for the construction on an area of 40 acres of four new docks at an aggregate cost of £5,740,570. The scheme is based on the recommendations of the Dominions Royal Commission, and will be sufficient to meet the expansion of traffic during the next half century. No. 1 dock, which is the first to be taken in hand, is estimated to cost £1,326,920.

LONDON COUNTY COUNCIL.

At the meeting of the London County Council yesterday (Tuesday) afternoon, the annual report was presented by the Housing of the Working Classes Committee. The financial results of the year show a net surplus on all dwellings and estates in course of development of £14,393, as compared with £15,877 for 1913-14 and £7,298 for 1912-13. The small decrease in the surplus as compared with 1913-14 is due chiefly to the increase in rates and to allowances to officers and employees serving with H.M. Forces. The decrease is to some extent counterbalanced by improved lettings generally during the year, the loss due to empty tenements being £1,373 less than in the previous year. The surplus originally estimated for 1914-15 was £11,153, so that the actual surplus shows a substantial improvement upon that estimated. The total capital expenditure of the Council on its working-class dwellings and estates amounted at March 31, 1915, to £3,056,646 (Housing Act, £2,313,108; Improvements Act, £743,538), the expenditure in 1914-15 of £34,733 being wholly under the Housing Act. The net capital expenditure on schemes for the clearance of insanitary areas under Parts I and II. of the Housing Act amounted, at March 31, 1915, to £2,664,579, of which £101,417 was expended in 1914-15. Almost wholly in respect of the Tabard Street scheme. The total loss of income due to empties was £5,952, or 2.59 per cent. of a total gross income of £230,036. This percentage compares with 3.23 and 5.20 for the two previous years. Of this loss £2,497, or 41.95 per cent., occurred at Carrington House, Deptford. The total financial result from the commencement of the Council's dwellings operations (1894) up to March 31, 1915, is a surplus on dwellings of £63,378, and a deficiency charged on the special county rate, in respect of estates in course of development, of £82,783. The net resultant charge on the rates for the whole of the operations has been £18,154. During the year accommodation was provided on the Old Oak estate, Hammersmith, and the White Hart Lane estate, Tottenham, for 580 persons in 76 cottages, comprising 25 of four rooms and small additional bedroom, 24 of four rooms, 1 of three rooms and small additional bedroom, and 26 of three rooms. Altogether accommodation for 57,942 persons was provided by the Council up to March 31, 1915, the accommodation consisting of 1,874 cubicles in Bruce House, Carrington House, and Parker Street House, 3,402 cottages and cottage flats, and 6,420 tenements in block dwellings.

The Education Committee recommended the formation of an advisory council in connection with the Central School of Arts and Crafts, Southampton Row. They further proposed the appointment of Dr. Frank H. Newman, at present education adviser to the North Riding County Council, as principal of Battersea Polytechnic, in succession to the late Dr. Sydney G. Rawson.

Mr. John Myers, architect, died on Tuesday in last week, at 24, Blomfield Court, Maida Vale, N.W., aged thirty-three years.

At Pembroke on the 15th inst., Mr. F. H. Tulloch held a Local Government Board inquiry into an application by the town council for sanction to borrow £4,000 for works of sewerage.

The Mayor of Bootle formally opened the chapel, which has been built at the Bootle New Cemetery, Linacre Lane, on Wednesday. The building, which has seating accommodation for 100 persons, is in the Decorated Gothic style, and cost £2,500. It is of brick with stone dressings, and has at the west end a square tower capped by an octagonal belfry stage with shingled spirelet. The architect was Mr. A. Ernest Shennan.

The South Molton Rural District Council have decided to advertise for a highway surveyor for their eastern district, involving the separate care of 41 miles of main and 211 miles of district roads. The new surveyor is to give the whole of his time to the work, and one will be given preference who is not of military age, whilst the council will prefer one who rides his own motor-bicycle. The salary offered to the candidate who is so fortunate as to be selected is £85 per annum!

Corrente Calamo.

The Royal Institute of British Architects' Gold Medal for Architecture, awarded this year to Mr. Frank Darling, of Toronto, was presented on Monday night. This is the first time that the medal has gone to a citizen of the Dominion. The medal was instituted in 1848 by Queen Victoria, and continued by Edward VII. and the present King. It is conferred annually on some distinguished architect or man of science or letters, who has designed or executed a building of high merit, or produced a work tending to promote or facilitate the knowledge of architecture, or the various branches of science connected therewith. On two occasions it has been given to American architects—Richard Morris Hunt in 1893, and Charles Follen M'Kim in 1903. Why not oftener to architects in the Britains beyond the seas, instead of to foreigners, we have wondered. Mr. Frank Darling was born in Ontario in 1850, and is the son of a Toronto clergyman. After four years in a Canadian architect's office, he came to England at the age of twenty, and worked under Sir Arthur Blomfield. He began practice in Toronto in 1875, and among the important buildings he has designed are the Toronto General Hospital, the Canadian Pacific Railway building, the Royal Ontario Museum, the buildings for Toronto University, the Winnipeg General Post Office, and Grain Exchange, the New Club House, Toronto, illustrated by us in our issue of October 24, 1913, Insurance Office, Toronto, in that of September 12, 1913, and the Canadian Bank of Commerce, in that of December 12, 1913. No other British architectural journal has published any of Mr. Darling's works. The war made it impossible for Mr. Darling to come over to receive the medal, and it was received for him by Sir George Perley, the High Commissioner for Canada, who read the cable message from Mr. Darling, which appears elsewhere in our report, appreciating the honour conferred on him, and adding, "I am a Canadian born and bred, and I welcome everything that tends to bring closer together the Mother Country and the Dominions beyond the Sea."

The slackness in work is marked in the exhibition of architectural drawings at the Royal Scottish Academy this year. One of the drawings on loan is the Government House, Delhi, by Mr. E. L. Lutyens, A.R.A. Sir John Burnet shows "The Institute of Chemistry," Russell Square—a simple Classic building in good taste. The Glasgow Municipal building extension, also Classic in design, is by Messrs. Watson and Salmon. A "Proposed Civic Centre, Dundee, from the South-West," is a piece of town planning by Mr. James Thomson, showing on an area by the river side a place, with a large Classic domed building, suitable for art gallery or town hall, in the centre. The "Training College and Practising School, Dundee," is by Mr. T. Martin Cappon. Messrs. John Burnet and Son send drawings of a proposed restoration of Duart Castle, Isle of Mull; Mr. H. J. Blanc is represented by drawings of the Ladies' College, Queen Street, including the imposing Classic façade; and the name of his son, Mr. F. E. B. Blanc, appears in the catalogue with a sketch in colour of additions to the North British Rubber Company works. Mr. G. Washington Browne shows a section of his first premiated design for the proposed new St. Paul's Bridge, London—the staircase to the Embankment, also the front of the new

Y.M.C.A. buildings, Edinburgh; Sir Robert Lorimer sends drawings of the new choir stalls, organ case, and east-end screen recently executed at Dunblane Cathedral, and other designs of interest are exhibited by Mr. James Miller, Messrs. Henry and MacLennan, Mr. Alexander N. Paterson, Messrs. H. E. Clifford and Lunan, Mr. James B. Dunn, Messrs. Alexander Cullen, Lochhead, and Brown. There are some designs of churches by Mr. P. M'Gregor Chalmers, Messrs. Stewart and Paterson, and Mr. A. Marshall Mackenzie. Mr. William Kelly shows a sketch of the Harlaw Memorial, which recalls an old Pictish tower.

The University of Manchester, under the advice of a Joint Architecture Committee, has decided to issue an annual "Sketch Book" contributed to by the more advanced students in the school, the intention being to record historic buildings in the city where architecture loses much by the narrowness of its setting and the destruction of its detail and texture by smoke, so that much of its character can only be appreciated by careful illustration. There are still many good nineteenth-century examples well worth measuring up, and the risk of their demolition justifies their careful representation in a permanent form. The Old Town Hall at Manchester has been more or less well illustrated of late, having been nominated by the promoters of students' medal competitions during the past few years, but this building has not before furnished the subject of so complete a monograph on such a scale as that now issued as the first folio of "The Manchester School of Architecture Sketch-Book," just published, with its nineteen big plates (19 ins. by 13 ins.) admirably reproduced and printed on fine stout paper. The contributors are Messrs. Gordon Hemm, G. B. Howcroft, and W. O. Jones. Mr. Percy Worthington, M.A., lent the photographs to complete the chosen subject as it deserved. The "Old Town Hall" was an exceptionally good example of what was known as "The Greek Revival," its detail being remarkably refined both in design and execution. It was commenced in 1819, and Francis Goodwin was its architect. It cost £40,000, and, showing the enormous increase in value of Manchester city sites, the land on which this Town Hall stood was sold for £161,750 in 1903. The building originally was designed as Police Offices and Town Hall, but was subsequently altered and used for municipal offices, and then it did service as a reference library. Consequently, it was altered more than once, and the internal design was much modified, so it lost its details and enrichments, which were designed after the Erechtheion at Athens. The widening of the street about 1866 involved the removal of the portico steps, also the podium wall and pedestals. The essential portion of the façade has, however, been preserved through the efforts of the Manchester Society of Architects for erection in Heaton Park. The drawings of it thus published are reliable and excellent. The price of this folio is 10s. 6d. net, and Messrs. Longmans, Green and Co. are the publishers.

An interesting exhibition of work by Ivan Mestrovic, the Southern Slav sculptor, is now open in the west and central halls of the Victoria and Albert Museum. Ivan Mestrovic is the son of a Croat peasant family in Otavice, a small village in Northern Dalmatia, and was born in 1883. He spent his childhood as a shepherd boy, and even at this early stage revealed his natural talent by carving rude decorative figures in wood or stone as presents for the peasants of the neighbourhood.

His first serious attempts at sculpture were the heads of modern Croat patriots. At eighteen he was apprenticed to a marble worker at Split (Spalato), and later, with a bursary from the Town Council, went to the Academy of Arts at Vienna, where he made rapid progress in technique. In his second year of study (1902) he already exhibited in the Sezession, and since then almost annually at that society's exhibitions. In 1907 he went to Paris and exhibited in the Salon d'Automne of that and the two following years. His first collective exhibition was held in 1910 at the Sezession of Vienna. He made his first appearance before his own countrymen the same summer at Zagreb (Agram), the Croatian capital, conjointly with the Croat painter Racki. In 1911 the Zagreb exhibits, with certain notable additions, were transferred to Rome, where they formed the chief feature of the Serbian Pavilion in the Exhibition of International Art. The figures of Marko Kraljevic and other heroes of Serbian legend, and the first architectural designs for a kind of Southern Slav Pantheon, to be erected on the battlefield of Kosovo, delighted the artistic world. In 1912 the completed wooden model for the Temple of Kosovo, which has now come to London, was exhibited for the first time at Belgrade, and was widely accepted as a true expression of Serbian national tradition. There are now shown almost seventy entries, including a series of religious works which have not previously been exhibited.

British by name and thoroughly British by nature, the system of the British Reinforced Concrete Engineering Company, Limited, of 82, Victoria Street, Westminster, S.W., and Trafford Park, Manchester, has many points special to itself which should commend it to architects and engineers, which are interestingly explained in an informative and excellently illustrated booklet just issued, which is well worth careful perusal. The B.R.C. Fabric is a steel wire mesh, of which the longitudinal wires are spaced and immovably fixed at regular distances apart by transverse wires arranged at right angles to the longitudinal, and welded to them at each point of contact. The longitudinal wires are secured to the transverse wires and held fixedly apart, *not by clips, ties, or other means*, liable to weaken or relax, but by an electric welding, an absolute connection which renders separate movement of the fabric physically impossible, and is the only reinforcement which provides a single unit of reinforcement throughout any required length, and guarantees conformity of reinforcement extending from end to end of the structure, forming throughout its entire length one continuous beam. The strength of the B.R.C. Fabric at the elastic limit is about 75,000 lbs. per square inch. Undoubtedly the most efficient type of reinforcement is that which offers the best resistance to all tensile stresses in the most direct manner. This the B.R.C. Fabric does; laid in the concrete along direct lines where the tension is greatest, each wire takes up its full share of work, and the danger always present when any irregular-shaped mesh is introduced and placed near the bottom of the slab, of the development of a tendency to close up and to shear the concrete on the underside on deflection of the slab is entirely avoided. The system is one of the most simple and easy to install. It is handy to use, and misplacement is impossible. It is applicable to any size and style of building or to any scheme of decoration, and gives the utmost satisfaction to architects and engineers who have used it. Some of the buildings where it has been installed are illustrated in the booklet, and some very

necessary hints are offered with regard to "safe-load" tables, which in some cases are given to architects and engineers without a statement of the actual stresses used and without an assurance that the tables allow for the weight of the floor itself, with the proper safety, in addition to the "working load."

One of those vexatious disputes between the unions of different trades which has seriously harassed the building trades in Birmingham seems at last about to be settled. The quarrel, which has been of long standing, has been between the Domestic Engineers' Society and the Plumbers' Society in regard to demarcation of work. The plumbers claimed, among other things, to fix the fittings of new buildings, including the installation of iron piping for hot-water supply, lavatories, and domestic supplies. The matter was referred to the Engineering and Allied Trades Societies' Federation, but the plumbers practically demanded the whole of the work in connection with the fitting up of new buildings, and they refused to allow their men on any work on which the domestic engineers might be engaged. This has had a very serious effect. Even at the moment work on the new Children's Hospital and the Clinical Hospital is held up in consequence. A committee of the federation have arrived at the following decision:—"The Engineering and Allied Trades Societies' Federation, after having heard arguments as to the demarcation of work between the Domestic Engineers and the Plumbers' Societies, place it on record that the claims of the Plumbers' Society are not borne out by facts, and their action in refusing to work on jobs with the domestic engineers is detrimental to the best interests of trade unionism in the city; and, further, this federation is of opinion that the offer made to the Plumbers' Society by the Domestic Engineers' Society as a basis for working is fair and equitable." The offer was:—(1) Hot-water service may be executed by either plumbers or domestic engineers; (2) all heating installations shall be recognised as fitters' work, and shall be executed by fitters; (3) all cold-water supplies in any metal shall be recognised as plumbers' work, and be executed by plumbers. The term fitters, it is stated, applies to domestic engineers.

We have used and noticed a good many books on hand-lettering in our time; but most of them left much to be desired. Mr. William J. Lineman, the author of "A Treatise on Hand Lettering for Architects, Surveyors, and Students of Mechanical Drawing," just published by Messrs. Chapman and Hall, Limited, at 7s. 6d. net, says, and we agree with him, most of them are mere cheap exercise-books for students, containing very insufficient provision for the actual needs of drawing offices. Mr. Lineman ministers to those needs by affording means for real direct practice in the kinds of lettering most required by architects, engineers, and surveyors; and after the mastery of each form of lettering its use is facilitated by the writing of phrases and titles from actual office drawings; while the architect and decorator are similarly supplied with models from actual friezes. We think he is right in giving the pupil large lettering to do at first. That is how we are taught writing at school—those of us, that is, who are taught writing at all nowadays! It encourages freedom and certainty. The chapter on the processes of zincography is a useful one. We hope some of our friends will read it and spare us some of the hieroglyphics we are expected to reproduce.

Our Illustrations.

CHURCH OF ST. WULFRAN, ABBEVILLE, NORMANDY.

This effective etching herewith reproduced among our inset plates to-day is now in the Royal Academy Exhibition, and we are indebted for its loan to the artist, Mr. Percy J. Westwood, A.R.I.B.A., of 7, Adam Street, Adelphi, W.C. Ruskin was not singular in his great admiration of this famous and noble church of St. Wulfran, which dates from 1488. The building, added to from time to time down to the seventeenth century, has really never been completed. Its west façade, shown by Mr. Westwood's appreciative picture, is its chief glory. The rich front is distinguished by the well-known triple portals adorned by statues of saints and gabled above. This part of the composition is surmounted by a horizontal cresting, skilfully binding the elevation together and forming a gallery at the level of the sill of the great west window of the nave. This fortunate feature is repeated at a higher stage by furnishing a second gallery below the belfry openings of the twin towers, and across the middle gable, which is boldly enriched by big statues of the Blessed Virgin Mary, St. Wulfran, and St. Nicholas. The towers have open parapets of Flamboyant traceries, and the intervening stair turrets terminate with conical roofs giving scale to the rest, and each spirelet has a flag finial in metal. The sculptures in the principal doorway below include some remarkable deviations from the usual subjects of the hierarchy. The most noticeable of these is the colossal lion, on the right of the portal, draped with a Royal Mantle sown with fleur-de-lis and bearing a standard of the same arms. This subject was presumably intended to illustrate in an emblematic way the Union of France and England, realised when Louis XII. was married at Abbeville to Mary of England. The doors of this west front are covered with admirably preserved figures relating to the life of the Virgin. These were carved in 1550, when a well-known merchant in Abbeville called Gilles Amourette, paid for their cost. The flanks of the church are supported by big wall piers and flying buttresses, and the walls are surrounded by two galleries of openwork character, having the florid richness distinguishing the whole building so far as the Gothic parts were conceived. One gallery extends below the springing of the roof, the other runs above the vaulting of the side chapels. The leaning Clocher de St. Firmin stands at the corner of the north transept. The narrow nave and side-aisles are contemporaneous, and the choir was added in the seventeenth century, its vaulting being still incomplete. The arms of Louis XII. and Anne of Bretagne figure among the bosses of the roof of the church. There is a florid but shallow triforium to the Flamboyant nave, to which it greatly adds a richness of effect. One of the treasures of this church is the very beautiful stained glass window illustrating the Tree of Jesse, in the chapel of Notre Dame des Merciers, situate at the end of the right aisle. The other chapels contain a series of sculptures of the fifteenth and sixteenth centuries. In the services of St. Wulfran's there are some curious local customs, among these being the distribution of benefaction cake carried in for blessing before the high altar in big baskets, and then distributed to the people present during high Mass. The dominating scale of St. Wulfran's, as compared with its immediate surroundings, makes the building appear like a cathedral in its proportions and importance. It furnishes a prominent landmark for miles around, and Abbeville, being on the line of attack made by the Germans on their way towards Paris, was subjected to much unwelcome attention during one period of the war. The sketch on which this etching is based was made by Mr. Westwood on the spot, before the war began. He has admirably succeeded in reproducing much of the local colour familiar to all who knew Abbeville and this admirable church in normal times, and our illustration will be

valued as an artistic record of one of the best known buildings in Normandy.

HALL AND CORRIDORS, "TIRLEY GARTH," CHESHIRE.

We reproduce the three sketches at the Royal Academy. They were taken from the actual work, which was completed some short time ago. The house is situated in the parish of Willington, near Tarporley, in Cheshire, and is of a somewhat unusual plan, being built around a complete cloister enclosing a "garth," hence the name. The ground-floor corridor opens on to the south walk of the cloisters, and the first floor corridor to a balustraded walk on the cloister roofs, which are barrel-vaulted. The hall, shown in the largest sketch, is connected with both corridors, on the ground floor by a square-domed hall at its east and west ends, and on the first floor by doors opening from the music gallery, which runs around three sides of the hall, and is connected to the ground floor by a separate small staircase arranged in the thickness of the external south wall of the hall. The late Mr. C. E. Mallows, F.R.I.B.A., was the architect. The builder was Mr. William Wood, of Hartford, Cheshire. A feature of the hall is a stone fireplace, which has some very beautiful figure work by Mr. Crossland McClure, of Radnor Street Studios, Chelsea, S.W. These pencil drawings were made by Mr. Mallows, and are admirable examples of his excellent draughtsmanship.

POST OFFICE LODGE AND Lych GATE, CHECKENDON, OXON.

This pair of country-side buildings, close to the old parish church of Checkendon, number among the last designs made by the late Mr. C. E. Mallows before his recent death. We give the plans and section of the lodge, which is specially interesting, inasmuch as it includes the village post office. This pencil perspective sketch by the architect shows the group, about which there is really little to add. When Mr. Mallows lent us these drawings a short time ago he promised to let us have a few particulars, but unfortunately his sudden death prevented this. The charm of his artistic facility with the pencil as a sympathetic medium is admirably expressed by the accompanying drawing and the clever way he harmonised these new additions in the precincts of the ancient church is at once evident. For compactness of plan and picturesqueness of treatment it would be hard to equal the contrivance of the lodge as herewith illustrated. As an architect Mr. Mallows will be much missed, and as an exactly precise and adroit pictorial illustrator of architecture he held a unique position. Note the quality of the yew trees in this sketch, introduced so as to set back Checkendon Church in the middle distance. The character of its ecclesiastical architecture is at the same time delicately suggested and faithfully rendered in a manner few could emulate.

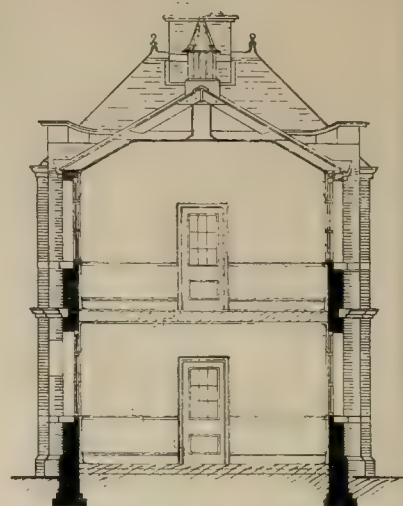
III.-IV., PRINCES STREET, LONDON, W.

This stone-fronted place of business, giving ample window space, has been built from the designs of Mr. W. Henry White, F.R.I.B.A., of Cavendish Place, W. The careful elevational drawing here reproduced shows the work so clearly that the subject needs little by way of description. The exigencies of shop arrangement have been fully accounted, and the separate entrance to the offices on the upper floors is well accommodated. The iron-fronted balcony on the fourth floor adds to the interest of the façade.

SELECTED DESIGN FOR THE CHILDREN'S RECEIVING HOME AT THE GRIMSBY WORKHOUSE.

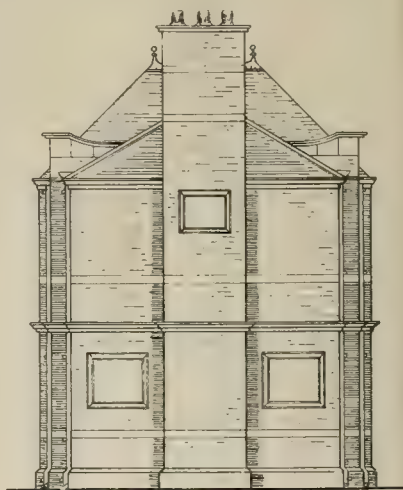
We give the elevations and plans of the accepted design adopted by the Grimsby Board of Guardians in the recent local competition. Accommodation is provided for fifteen boys and fifteen girls. No back entrances or back playgrounds are provided, as the rear of the building faces due east, and because there is an open stream at the rear. The w.c.'s and lavatories are arranged alongside the back wall, in order to prevent the children from playing near the waste and soil pipes. The foster-mother's sitting-room and

bedroom are arranged so as to secure the best supervision over the children in the building as well as in the playgrounds. The elevations are to be faced with stock bricks and stone dressings. The interior walls have



Section.

glazed tile dadoes. The plans have been approved by the Local Government Board, with a few minor alterations made by the board of guardians in order to reduce the cost. The erection of



Side Elevation.

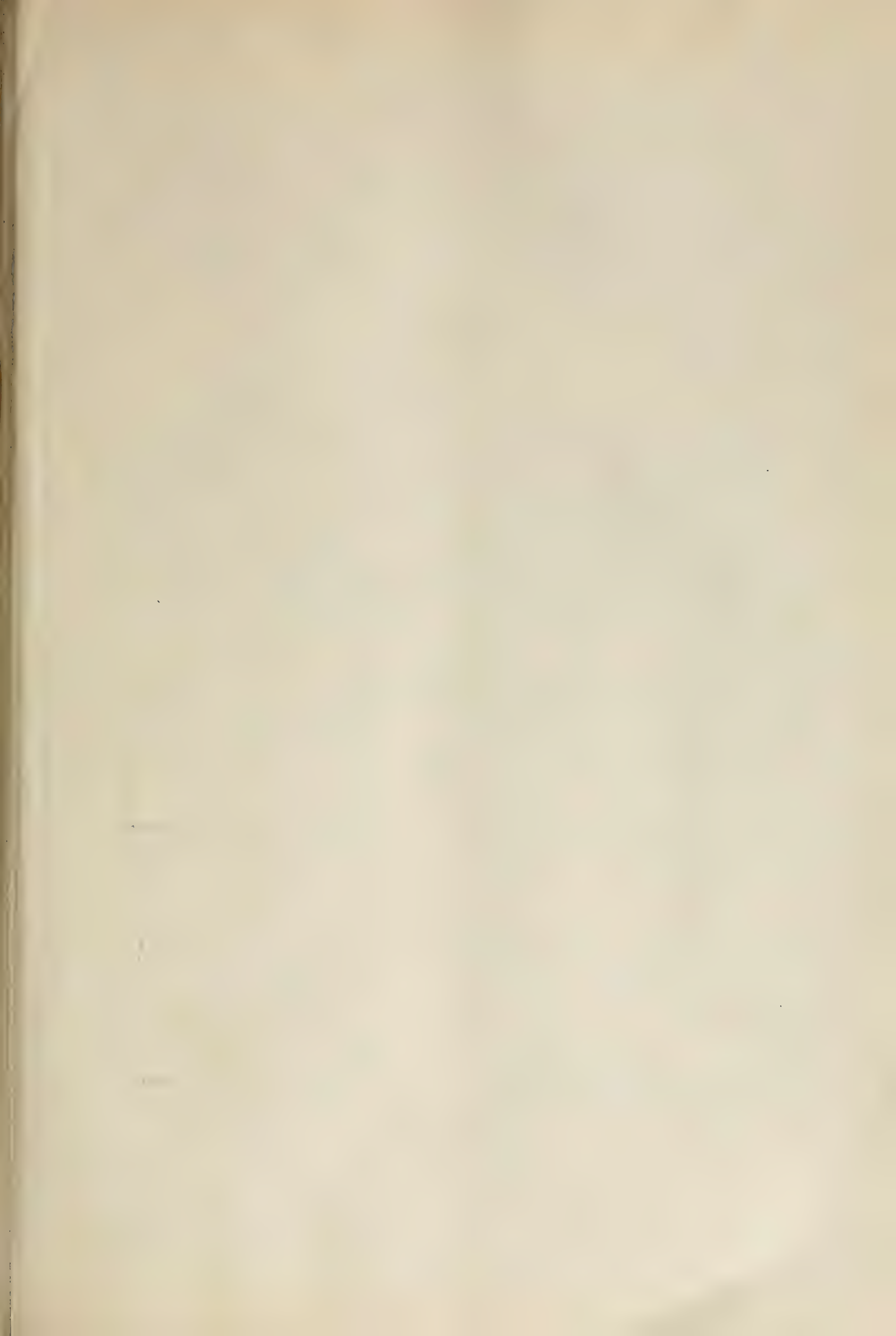
the building is being delayed owing to the undesirability of incurring capital expenditure at the present time. This successful design is by Mr. T. Waddingham, architect, No. 89, Cleethorpe Road, Grimsby.

The town council of Dunbar are seeking to borrow £1,800 to meet the cost of a new wall which has been erected along the south side of the Castle Park, under the supervision of their burgh surveyor, Mr. A. Moody.

Mr. W. O. E. Meade King, an inspector under the Local Government Board, held an inquiry at Wrexham on Thursday into an application by the urban district council for sanction to borrow £6,056 for the erection of workmen's houses.

At Sprotborough, near Doncaster, on Wednesday, Archdeacon Sandford opened the ancient church of St. Mary, after restoration and rearrangement. The church is one of the most beautiful in Yorkshire. The renovation scheme has entailed an expenditure of £2,000.

Mr. Joshua Lambert, deputy engineer and surveyor to the Tottenham Urban District Council, has been unanimously appointed acting engineer and surveyor, and Mr. Walter Vincent, the next assistant, acting surveyor to the education committee, during the absence of Major W. H. Prescott, R.E., on active service.

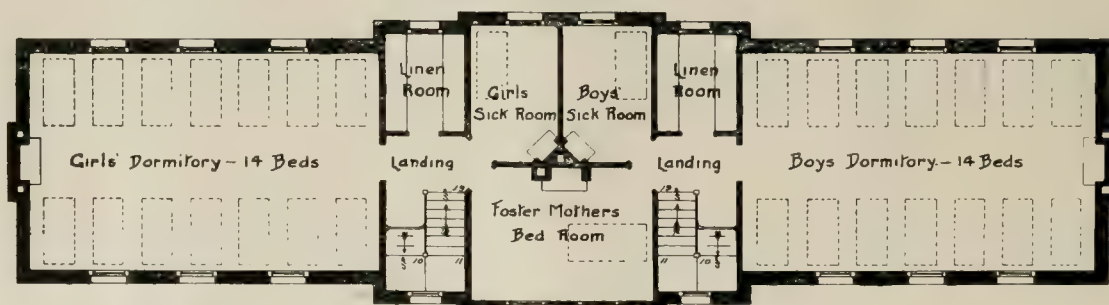




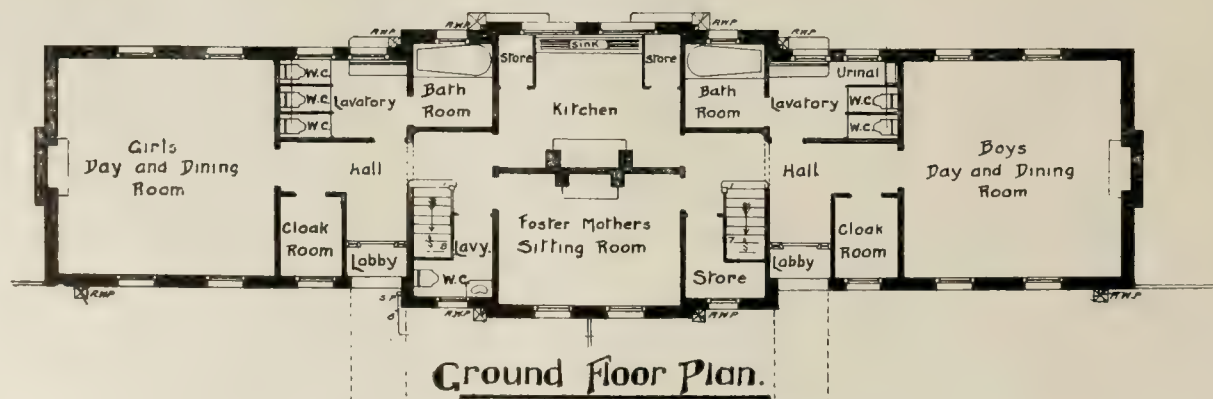
Front Elevation.



Back Elevation.



First Floor Plan.

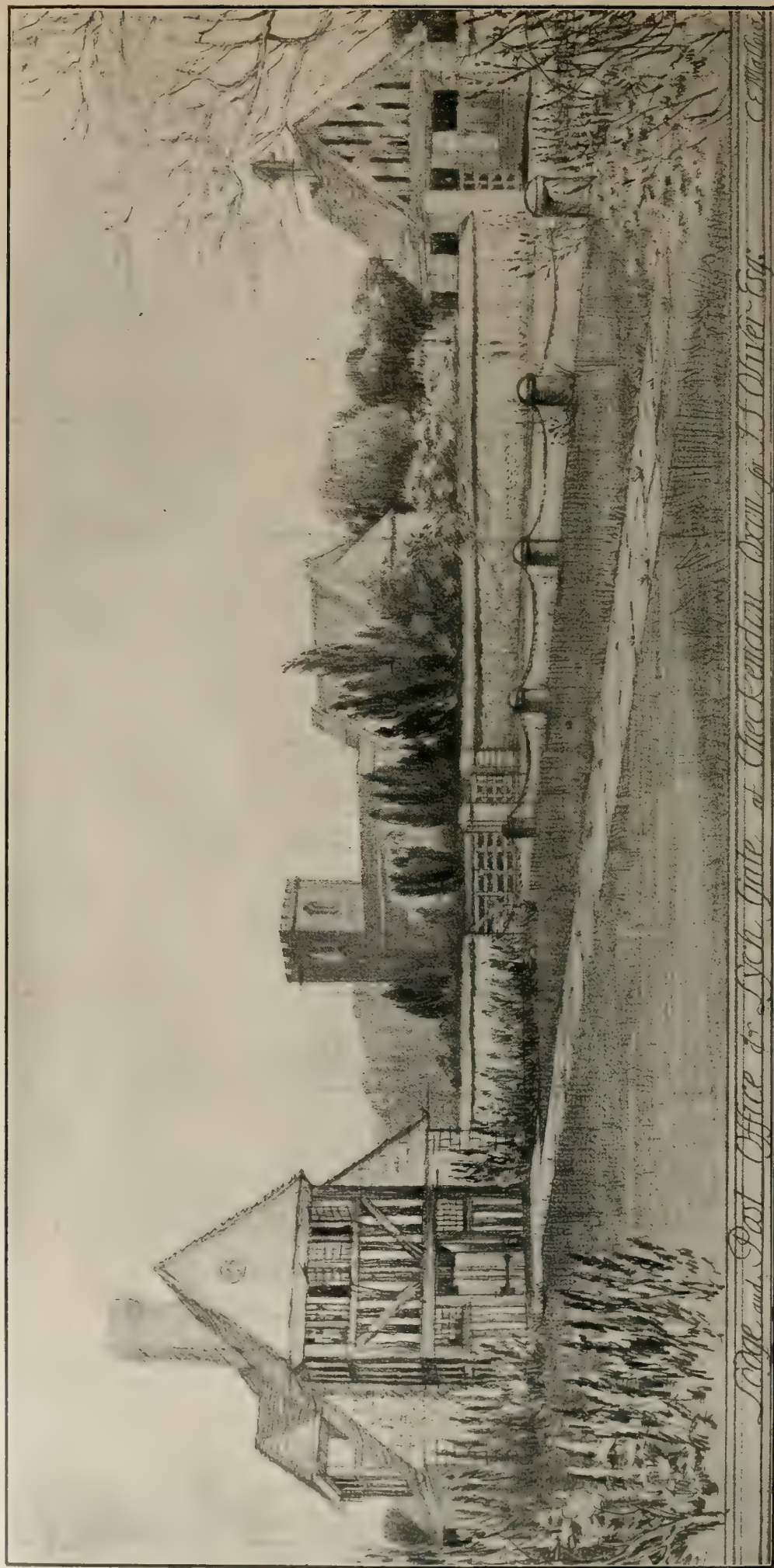


Ground Floor Plan.

Scale of Feet

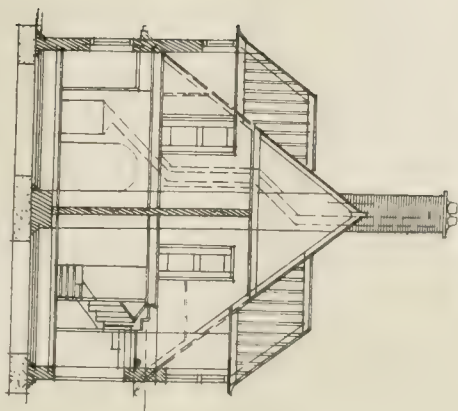
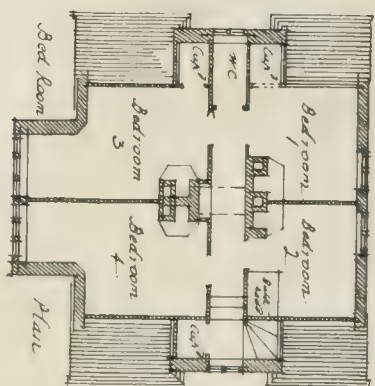
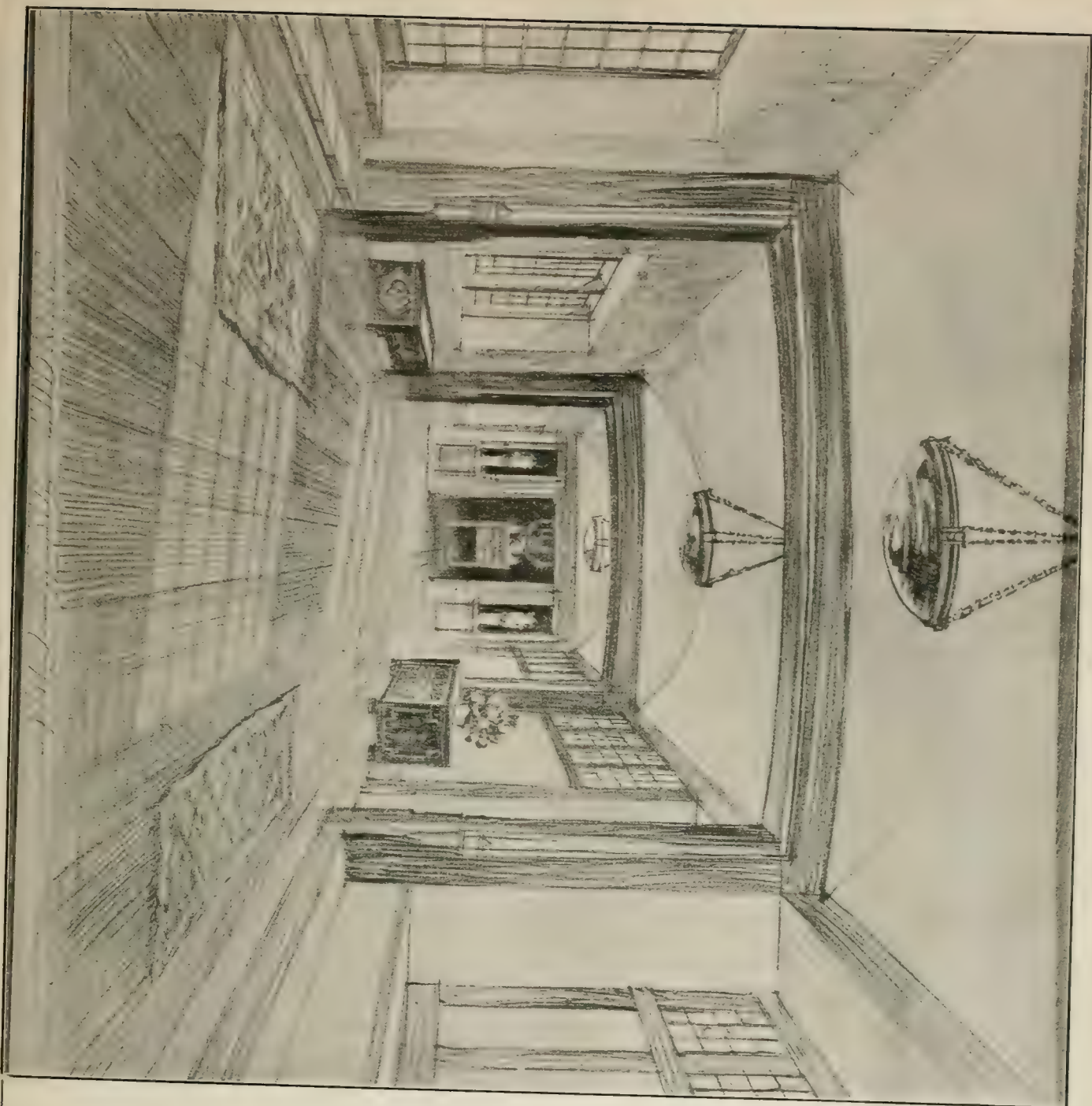
SELECTED DESIGN CHILDREN'S RECEIVING HOME, GRIMSBY WORKHOUSE.
Mr. T. WADDINGHAM, Architect.

THE BUILDING NEWS, JUNE 23, 1915.

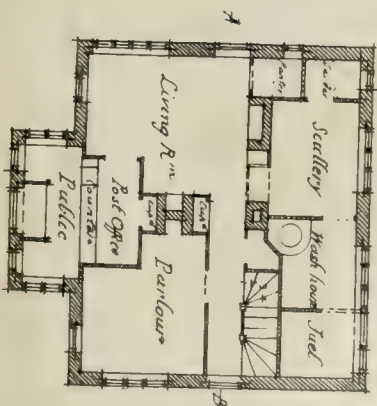


LODGE AND POST OFFICE AND LYCH GATE, CHECKENDON, OXON.

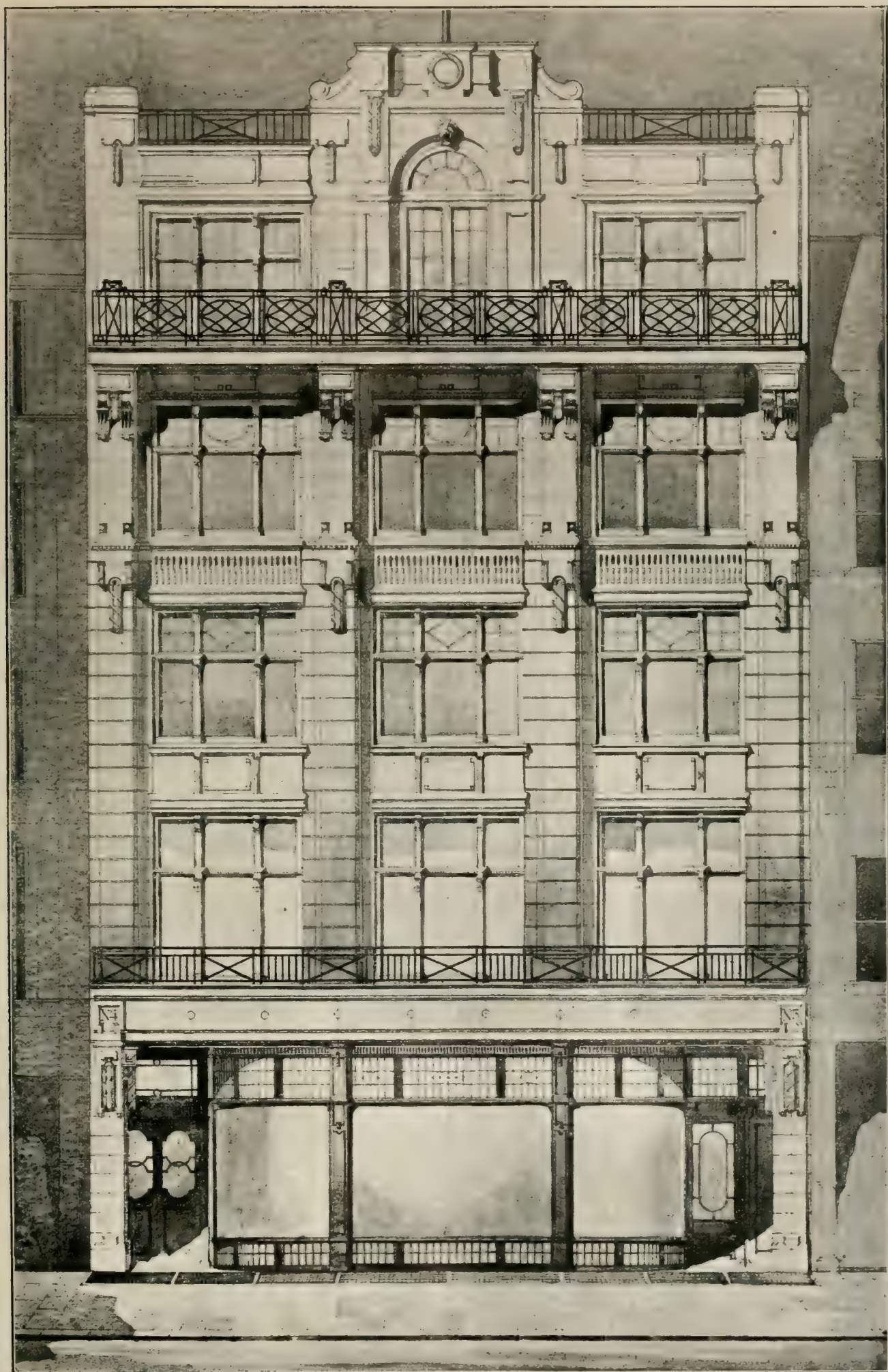
The late Mr. C. E. MALLOWS, F.R.I.B.A., Architect.



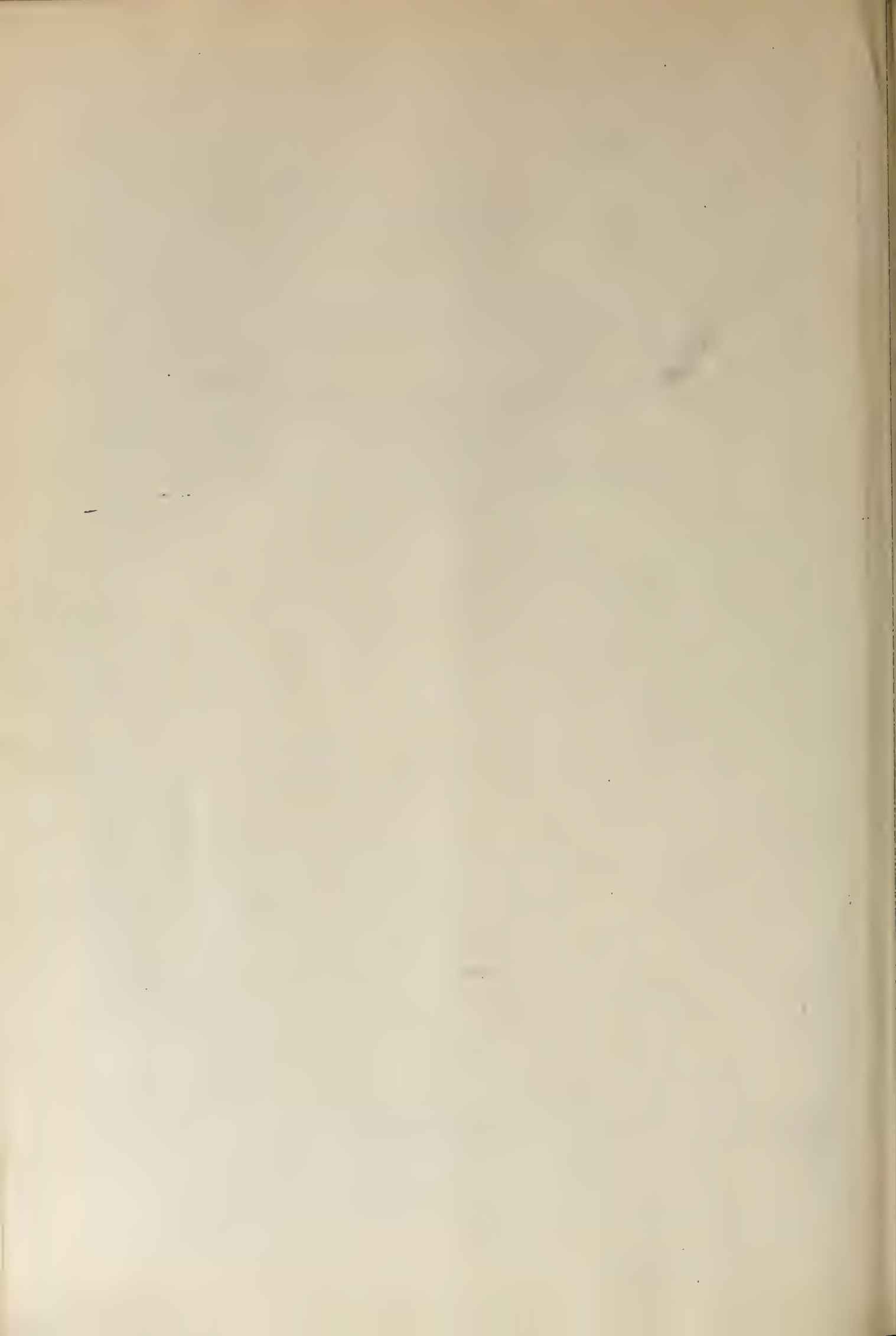
Section A-B



Ground Plan



3 and 4, PRINCE'S STREET, W.—Mr. W. HENRY WHITE, F.R.I.B.A., Architect.

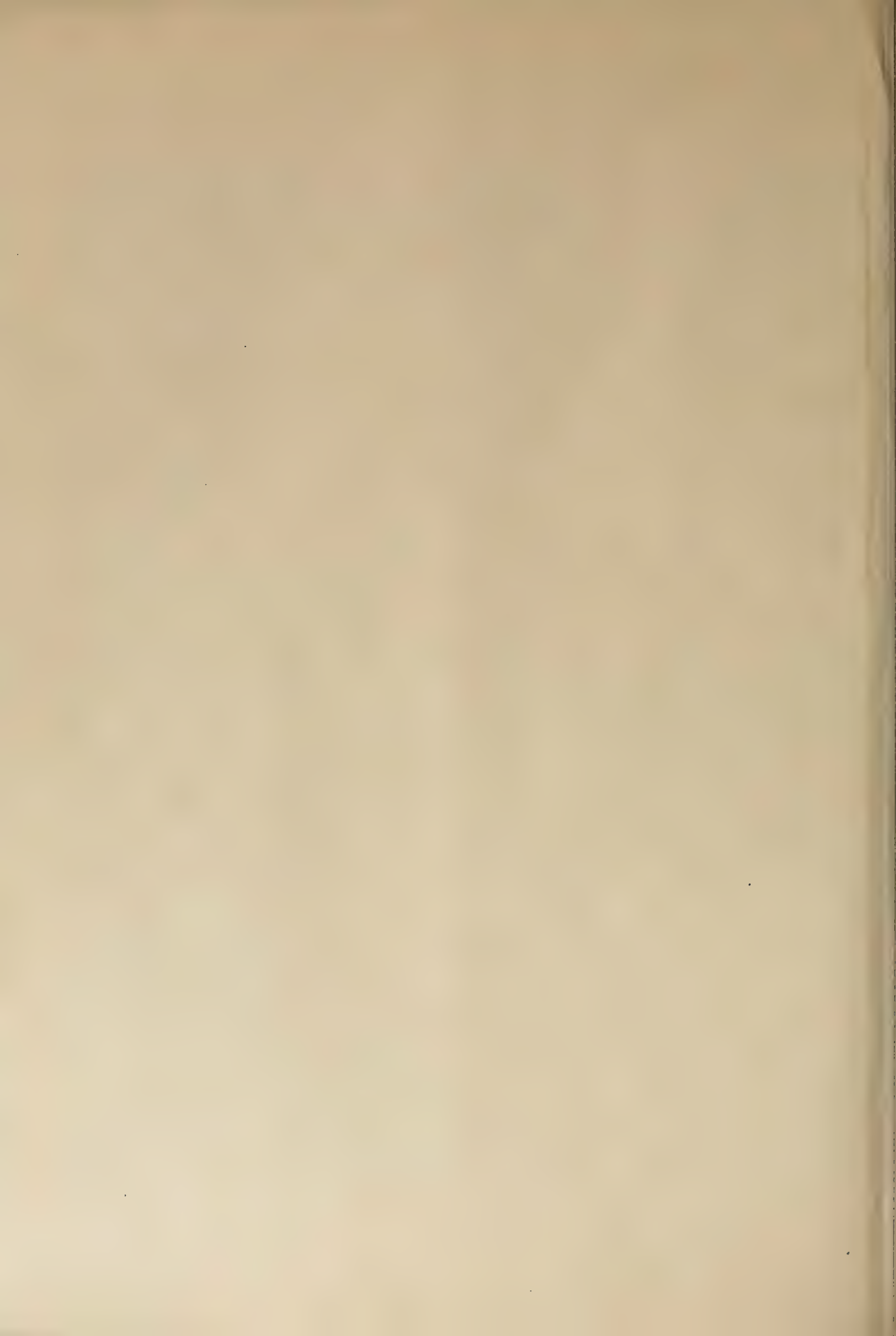


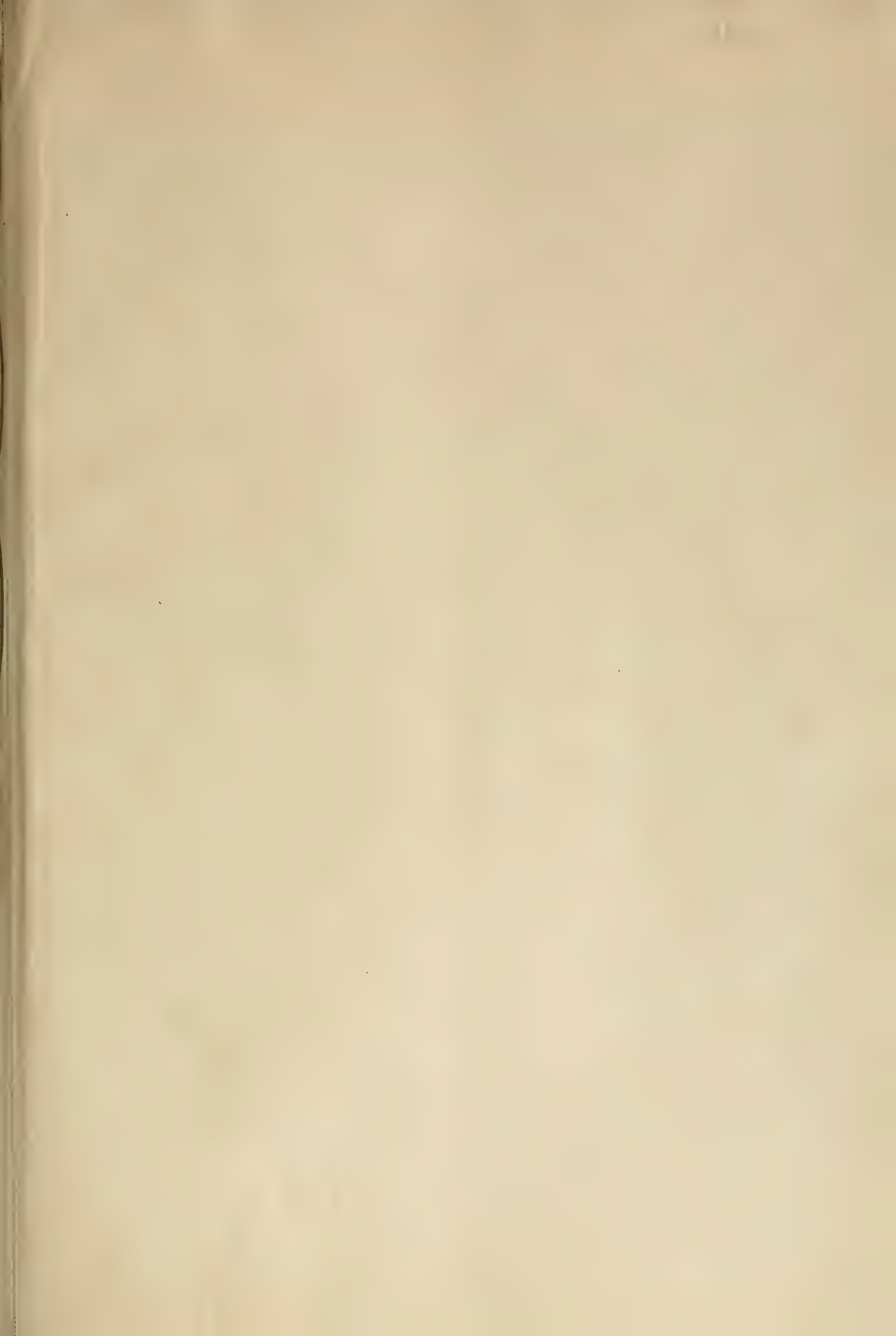


CHURCH OF ST. WILFRAN, ABBEVILLE, NORMANDY.

From an Etching in the Royal Academy Exhibition by Mr. Peter J. Wiswold, A.R.D.S.

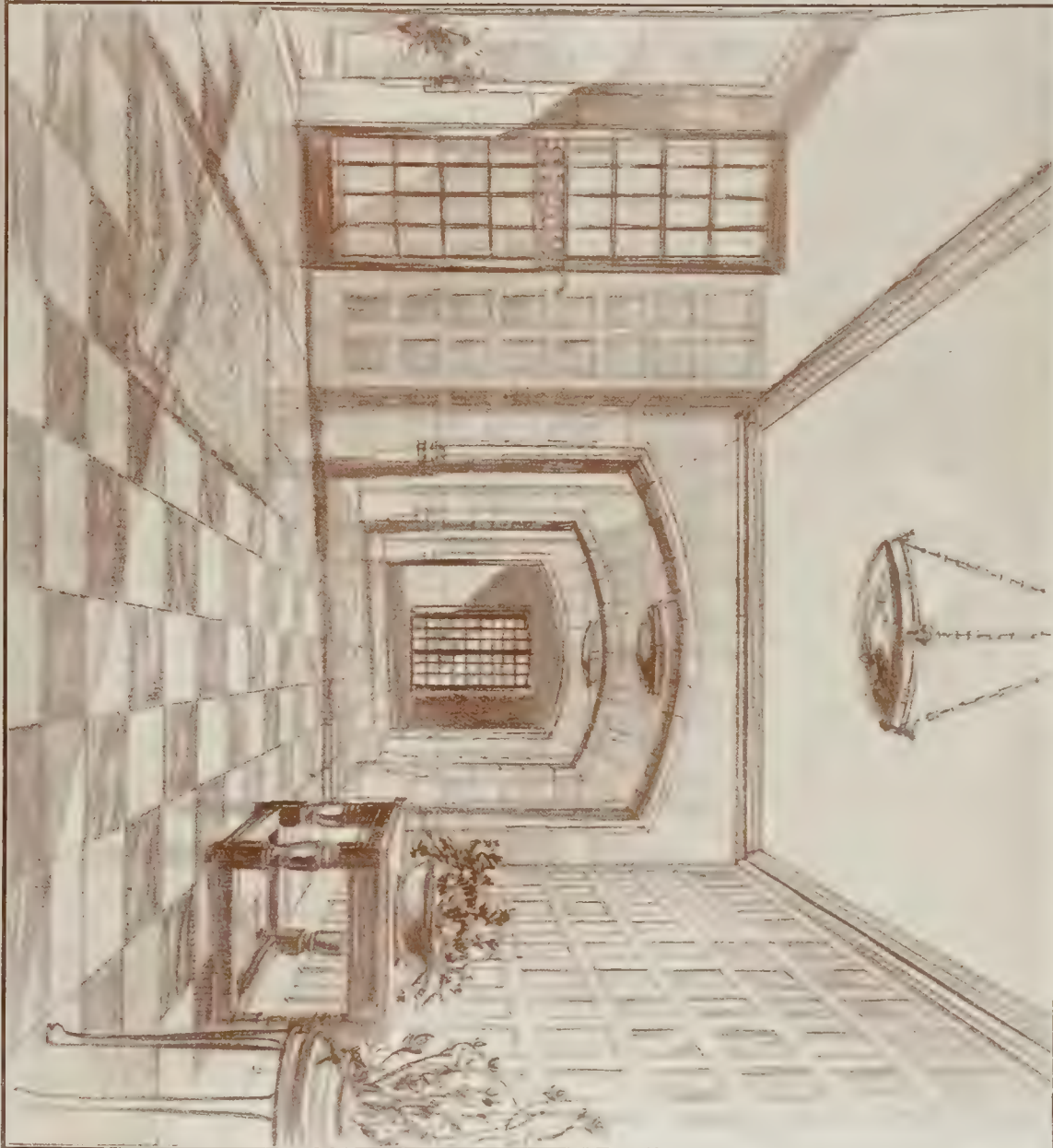








THE HALL AND GROUND FLOOR CORRIDOR, TIRLEY GARTH, WILLINGTON, CHESHIRE.
The late Mr. C. E. Mallows, F.R.I.B.A., Architect.



Building Intelligence.

BUSHBURY.—Plans have been approved by Cannock Rural District Council for the erection of new works at Bushbury. They are for Messrs. Macfarlane and Robinson, enamelled hollow-ware manufacturers, Stafford Street, Wolverhampton, and of Glasgow. They have acquired about twenty acres of land between the Stafford Road and the London and North-Western Railway, on which it is proposed to erect new works and houses for the workpeople. The contract has been placed with Messrs. H. Gough and Son, Wolverhampton.

DUBLIN.—The first section of the new Carmelite Priory Buildings being erected in Aungier Street, is nearing completion. Reinforced concrete is employed for the general construction, the walls having bar steel tension rods and the floors formed with insertions of expanded steel, rib and diamond mesh, in the concrete. The principal rooms are finished with oak block flooring and fibrous plaster ceilings, lavatories and bathrooms having marble Terrazzo flooring. The contractor for the whole of the work is Mr. Patrick Shortall, of Temple Street, Dublin, and his foreman in control of the work is Mr. Price. The scheme is being carried out from the designs of Mr. C. Powell, architect, and the workmanship is supervised throughout by Mr. M. J. Cullen, C.E., who also prepared the bills of quantities.

LEGAL INTELLIGENCE.

THE REPAIR OF HIGHWAYS.—In the King's Bench Court on the 15th inst. judgment was given by the Lord Chief Justice and Justices Ridley and Avory in the appeal of Wythes v. the Mayor and Corporation of Bromley. It was an appeal by Mr. Wythes, of Bromley, Kent, from a decision of the local justices, who had ordered him to pay a large sum towards the repair of Blackbourn and Barfield Roads at Bromley. Appellant claimed that these were ancient highways and repairable by the inhabitants at large. The appeal was dismissed with costs. The Lord Chief Justice said the appellant was the owner of the Hickley Park Estate, a part of which abutted on the two roads in question, and he had been held liable by the justices to pay his share of the cost of repairing the roads on the ground that the obligation did not fall on the inhabitants at large. The question was whether there was evidence before the justices upon which, as a matter of law, they could conclude that these two roads were repairable by the inhabitants at large. The appellant said that by an order of 1869 those two roads were substituted for other roads as highways, and as the old roads were repairable by the public, the substituted ones came within the same category. The mere fact that the corporation had never repaired the roads was not sufficient to prove that they could not be called upon to do so. There was no doubt that the respondents had watered the roads at the appellant's request, and that the agent of the estate had stated that it was about time the corporation took the roads over. Of course, the opinion of the agent that the roads were repairable by the appellant might not be of any value, but it seemed to indicate that the appellant was of opinion that he was liable. The appellant was the person who should know whether he should do the repairs or not, and if he accepted the burden without demur for many years and did not complain, then that was evidence from which the magistrates could draw the inference that the repairs were not liable to be done by the inhabitants at large. The Court, therefore, came to the conclusion that the justices were right, and the appeal failed. Justices Ridley and Avory concurred.

COMPETITIONS.

WHITEHAVEN.—Mr. W. J. Swain, architect, York, and Mr. E. E. Stiven, the borough surveyor, the adjudicators in connection with the housing scheme competition, have made their awards, and the following are the successful competitors, viz.:—First, Mr. J. S. Stout, 36, Lowther Street Whitehaven; second, Mr. H. Lord, 42, Deansgate, Manchester; third, Messrs. Unwin and Holland, 11, Library Street, Wigan.

PROFESSIONAL AND TRADE SOCIETIES.

PLYMOUTH ARCHITECTS.—A committee meeting of the Plymouth District Branch of the Devon and Exeter Architectural Society was held at the Athenæum, Plymouth, on Wednesday. The death of Sergt. Charles H. Phillips, of the Expeditionary Force, and of Victoria-place, Stoke-by-Devonport, was reported, he being the first member of the society to lose his life in the war. A letter of condolence from the President has been forwarded to his relatives. With regard to municipal building work in contemplation, the hope was expressed that the council would engage the services of architects practising within the borough, particularly as there existed a general dearth of employment in the profession, although a large number of the local members had joined the forces.

AUSTIN FRIARS, E.C.—At the last meeting of the British Archaeological Association, the Rev. H. P. Ditchfield presiding, Mr. W. A. Cater read a paper entitled "Further Notes on the Austin Friary of London," in continuation of his paper published in 1912, and in correction of some of the views therein expressed as to the conventual church and the location of the domestic buildings. He explained that he had been able to reconstruct these from the descriptions in post-Dissolution documents preserved at the Record Office. It was now possible to rearrange the ordering of the Friary Church and to locate the chapels mentioned in the Harleian lists of burials. The evidence now available proved that the windows to the north aisle could not have been continued beyond the fifth light, and that these were only upper lights to the transept and two westernmost bays of the choir, although the contrary had been contended in view of the method of construction of its prototype, the Grey Friars Church. The buildings exemplified a feature which characterised Friars' churches, namely, the narrow transept or crossing which aligned with the choir and nave. The lecturer appropriated fifteen bays to the Austin Friars' house, giving a total length of about 265 ft. and a breadth of 83 ft., against 300 ft. and 89 ft. in the case of the Grey Friars. The claustral buildings which may be located are the chapter-house, the refectory and kitchen, the large or western dormitory, the little dormitory, and, with considerable probability, the library. Annexed to the choir was a chapel called "le Dukes Chapell," which possibly derived its name from the fact that the Duke of Buckingham (who was executed on Tower Hill in 1521) had probably been interred there.

WATER SUPPLY AND SANITARY MATTERS.

CROYDON WATER SUPPLY.—To improve the water supply of the borough the Croydon Corporation have resolved to promote a Bill in Parliament for the construction of two new wells and other works on sites a few miles to the west of Croydon, also to supply the chlorine process of purification to the whole supply of the borough. The scheme, which will not be completed in less than five years, is estimated to cost about £250,000.

NOTTINGHAM.—The water committee report to the city council that they have applied themselves to the problem of the Derwent water and have decided, instead of participating in a joint scheme of supply with the corporations of Leicester and Derby, to install an independent plant for the mechanical filtration and treatment of the water.

TRADE NOTES.

On and after the 24th instant the offices of the National Radiator Co., Limited, will be transferred to Hull, where all correspondence should be addressed.

Under the direction of Mr. William Williamson, architect, Kirkcaldy, Boyle's latest patent "Air-Pump" Ventilator has been applied to Blairhall School, Dysart.

Messrs. Marshall, Sons, and Co., Limited of Gainsborough, are exhibiting a new type of traction engine at the Royal Agricultural Society's Show, Nottingham.

Our Office Table.

Some very interesting work was carried out by the 4th Battalion "Architects" Central London Regiment Volunteers recently in the way of long distance signalling, when in conjunction with the Hampstead Volunteer Training Corps they maintained communication for three hours between Judge's Walk, Hampstead, and Furze Hill, Boreham Wood, a distance of just over seven miles, using the Morse code with large flags. The Signalling Manual states that in England communications can usually be maintained for a distance of five to seven miles in a clear atmosphere. The Signalling Section of these Volunteer Corps have thus maintained their signalling up to the maximum standard laid down for Regular troops. As an application of the arts of peace to the science of war, the "Architects" constructed a six-span bridge, 72 feet long, 8 feet wide, and 7 feet high at the centre in between six and seven working hours over a pond at their camping ground on the Architectural Association Athletic Ground, Boreham Wood, Elstree. As this was the first bridge which they had put up it may be regarded as a fairly successful piece of work. The members are now about to render assistance in the production of munitions, and in connection with it a permanent camp will be formed on the river-side, at which this work will be added to the other training. This useful corps is at present forming an additional Company, and the Commanding Officer hopes that the record of work which they are able to do may induce those members of the allied professions and kindred trades of which the corps is mainly composed to join in considerable numbers. Applications should be made to the Adjutant, 10, Conduit Street, W.

The Architectural Association has undertaken to form a Red Cross Voluntary Aid Detachment, with headquarters at 18, Tufton Street, Westminster. At least fifty men are required, and it is hoped that all those connected with the architectural profession who are not eligible for the Army and not otherwise serving the country at the present time will send in their names to the secretary of the association, from whom all further particulars may be obtained. A subscription of 2s. 6d. is asked from each member joining to defray the cost of training equipment. The detachment will be made use of by the Red Cross Society immediately it is efficient. A short course of training is necessary to obtain the Red Cross Society's certificate, and this training course will be commenced at once. It is, therefore, necessary that those who desire to join should send in their names without delay, and at the same time state if they have had any experience in first-aid work and if they hold any certificates. It is not expected that members of the detachment will give full time, but whatever time can be given to the work will be fully utilised.

The London Education Committee decided at the last meeting to reduce the capital estimates passed in March last from £600,000 to £480,000 for the year ending March 31 next, and to reduce the sum allocated for the six months ending September 30, 1916, from £414,810 to £57,675. The sub-committee which recommended this course reported that they had, in reviewing the estimates, borne carefully in mind the course suggested by the Prime Minister in the House of Commons on May 13, when he said:—"Running contracts could be allowed to continue, subject to whatever can be done in the way of slowing down, and the new contracts should not be continued or proceeded with." Mr. Warburg also explained that they had put £8,000 into the estimates to enable the architect to prepare plans for one year's building work at the end of the war. The revised estimates were unanimously approved.

The octogenarian Dean of York has edited the valuable work of the late John Browne on the representations and arms on the glass of the windows of York Minster, and the book will be published in the autumn by Mr. Richard Jackson, Leeds. Mr. Browne spent

nearly the whole of the leisure hours of his life in studying and sketching the Minster, of which he wrote a monumental history, published in 1847. Immediately after the completion of the history the author commenced to get together materials for a full and complete description of the stained glass windows both as to the subjects portrayed and the heraldic bearings, etc. The work was just completed before his death, and the MS., with sketches, came into the possession of the Dean and Chapter, who gave it an honoured place in the Minster Library. It is this material, hitherto not printed, that has been edited by the Dean, who has written a biography of the author. The book will comprise about 300 pages of text, fully describing the subjects and armorial bearings in the windows (500 in number), together with historical notices of the families to whom they belong. There will be forty pages of illustrations, in which upwards of 500 figures will be delineated, all printed in heraldic colours from Mr. Browne's original drawings.

M. Dalmer, French Under-Secretary of State for Fine Arts, accompanied by twelve members of the Commission of Education and Fine Arts, visited Rheims on Saturday to examine the measures taken for the protection of the cathedral. M. Simyan, president of the Fine Arts Commission, declared on his return from Rheims that the damage done to the cathedral during the bombardments of the last fortnight was enormous. "Besides the tapestries, the State has collected all the fragments of statues and windows broken by the bombardments, and taken them to a place of safety. Practically speaking, nothing is left of the cathedral but the silhouette. The Fine Arts Administration has prepared plans for its restoration, and they will be executed as far as events permit. It will be absolutely impossible to restore the original beauty of the cathedral, but everything practicable will be done."

An interesting departure in extension work was initiated last session by the Governors of the Glasgow School of Art, who have been actively engaged in organising a lending museum scheme. This scheme provides for the collection at the School of Art of a carefully selected store of art objects, which may be had on loan by art schools and classes affiliated to the central institution. It is thus possible for schools that participate in the scheme greatly to improve their art equipment and to obtain for their students a flow of fresh art examples of the best type. This arrangement, which is likely to have valuable results, has already met with a ready response from the managers of the fifty-two schools which are participating in the scheme. The Governors of the Edinburgh School of Art are considering means whereby a similar organisation may be established which shall serve the art centres in the eastern area.

A sharp discussion took place at the last meeting of the Town Council of Edinburgh on a recommendation by the Lord Provost's committee to authorise that all work for the current financial year that could reasonably wait be delayed; that the services of the city be reduced to the lowest minimum required for bare safety; that all workers that could be dispensed with be dismissed, so that they might devote their services to national purposes; and that the various committees and heads of departments be instructed to give immediate effect to this resolution. The Town Clerk read a letter from the Central Board of the Independent Labour party expressing their strenuous opposition to the motion, believing it to be a contemptible form of conscription. It was reported that in the way of saving the Streets and Buildings Committee had effected a reduction in the provisional estimates of £10,674. Eventually the resolution was unanimously accepted, with the deletion of the important clause "that all workers that can be dispensed with be dismissed, so that they may devote their services to national purposes," the word "effect" in the last line changed to "attention," and the addition that a report be obtained as to how and to what extent the reduction could be effected.

Mr. Frank Ricketts, the sanitary inspector to the Ross Rural District Council, in his annual report to that authority, states that every endeavour has been made during the year to improve the sanitary condition of the district, and to bring the environments of the working classes up to a higher standard. Under the Housing and Town Planning Act the inspections numbered 308, bringing the total number of inspections up to 911. These houses extended over an area of 22,077 acres, with a population of 4,290. In only a few cases had houses exceeding a rent of £16 per annum been inspected. The number of houses which had been put in a habitable condition since the commencement of the work was 210. There were now 298 houses scheduled for repairs, which would mean a considerable amount of work. There was a great scarcity of labour in the country districts, and those people who remained would be required for work having a more important bearing on matters connected with the nation, more especially regarding food supplies. Some difficulty in getting into houses would be found owing to women being engaged on work hitherto performed by men.

At the meeting on Friday of the Provincial Committee for the Training of Teachers, held at Aberdeen, letters were received from three of the contractors for the new Training Centre buildings, requesting consideration on account of the enhanced prices of materials caused by the present war. It was agreed to reply to the effect that, in the exceptional circumstances, the Provincial Committee were prepared, when the contracts were completed to their satisfaction, to make, subject to the approval of the Scottish Education Department, an *ex gratia* payment to account of any unavoidable loss the contractors might be able to satisfy the Committee that they had sustained in connection with any of the items in the contract directly due to the war.

The campaign directed by the Hon. W. R. Ross, Minister of Lands in British Columbia, to educate the consumer in distant markets concerning the qualities and adaptability of British Columbia woods has been advanced another step, the first consignment of the permanent exhibits to be stationed at important trade centres throughout the world having been dispatched. Each exhibit is of a comprehensive character, showing the principal woods of the province in both the natural and finished states, displaying the various styles of manufactured material for which each species is adapted. Accompanying the exhibit are photographs intended to convey an idea of the extent of the great lumbering industry, and showing the course of the log from the forest to the mill and loading wharf. In addition, information is supplied by means of printed cards concerning the qualities and uses of the leading woods of British Columbia—Douglas fir, cedar, hemlock, and spruce. The eight sets already dispatched will be on view at five trade centres in the United Kingdom—namely, London, Birmingham, Manchester, Bristol, and Glasgow; also at Paris, Shanghai, and Yokohama, in the care of the respective Canadian Trade Commissioners.

The Bournemouth Corporation has been authorised by the Local Government Board to borrow £1,341 for the widening and improvement of St. Stephen's Road.

The corporation of Warrington have adopted the plans of the borough surveyor, Mr. A. M. Ker, for the erection of a new small-pox hospital, at an estimated cost of £1,500.

Plans submitted by the Welsh Town Planning Association for the erection of one hundred cottages at Weston Rhyn, a populous mining district, have been passed at a meeting of Oswestry Rural District Council.

At Reigate, on Monday, a Local Government Board inquiry was held into an application by the town council for sanction to a loan of £6,000 for the erection of a police and fire station in London Road, Redhill.

Mrs. Frank Smith, wife of the first architectural assistant in the office of the borough engineer and surveyor of Southend-on-Sea, died on Tuesday in last week as the result of severe injuries sustained during the Zeppelin raid on the night of May 26.

CHIPS.

The Theatre Royal at Belfast is about to be converted into a picture palace from plans by Mr. Bertie Crewe, of London.

The urban district council of Porthcawl have received the sanction of the Local Government Board to borrow £8,000 for a new water main.

Plans have been prepared by Messrs. Taylor and Wallis for the Halstead Rural District Council for a supply of water to the village of Castle Hedingham. The estimated outlay is £2,160.

A proposal by the College School of Architecture to exclude the subject of town planning from the curriculum of the Royal Technical College, Glasgow, has been vetoed by the college governors.

At a meeting of the town council for Newport, Isle of Wight, on Wednesday, Mr. E. A. Slater, A.M.Inst.C.E., was appointed borough surveyor. Mr. Slater is at present deputy borough surveyor of Colchester.

An annexe to North Kelvinside Higher Grade School, Glasgow, built at a cost, exclusive of site, of about £14,810, has been formally opened. The architects were Messrs. R. A. Bryden and Robertson, Bath Street, Glasgow.

Alderman Wm. Henry Spaul, ex-Mayor of Oswestry, a prominent Freemason and architect, for many years surveyor for the diocese of St. Asaph, who recently lost his life in a carriage accident at the age of seventy-nine, left £3,221.

The education committee for West Sussex have adopted plans for a new council school at Horsham, estimated to cost £5,408; a similar school at Crawley to cost £4,945, and a third school at Northchapel to cost £1,821; and to effect alterations and additions to the school at Elsted.

The rural district council of Downpatrick have considered an application on behalf of the contractors for labourers' cottages for an increase in the contract price, and have decided to grant £10 extra per cottage. Two hundred and thirteen cottages are being built under the present scheme.

The director of the National Physical Laboratory states in his annual report that, at the suggestion of the principal architect in charge of the Royal Palaces, and with the approval of the Office of Works, it is proposed to commence a systematic study of the cracks in the buildings of the Tower of London.

The members and chief officers of the Inverness Town Council have presented Mr. T. H. Scott, the burgh surveyor, with a silver salver and a silver cigar case, prior to his departure to take up an important appointment at Port of Spain, Trinidad. Mrs. Scott has been presented with a cairngorm brooch.

The Treasury have intimated to the Dublin Corporation their sanction to a loan of £31,930 for the erection of cottages on the Beresford and Church Street areas, but they are not prepared under present circumstances to sanction any advance in connection with the loan of £22,400 sought for buildings at Ormond Market.

The question of reconstructing the well-known Norfolk Suspension Bridge over the River Adur connecting Shoreham and Lancing is under the consideration of the West Sussex County Council. The estimated cost of reconstruction is £17,000. The bridge was built for a Duke of Norfolk in 1833 by Clarke, the engineer of Hammersmith Suspension Bridge.

The annual excursion of the Architectural Association of Ireland has been fixed for Monday and Tuesday, July 5 and 6. A particularly attractive programme has been arranged at very moderate cost. On the first day the members will visit by motor-cars Swords, Lusk, Balrothery, Drogheda, Beaulieu, New Grange, Platten Hall, and Duleek. On the second day the tour will include Leixlip, Maynooth, Carton, Celbridge, and Newcastle Lyons. The entire cost of the excursion is 25s. for the two days, including luncheons and motors.

The Southern Section of the Arterial Roads Conference met at the Local Government Board offices, Whitehall, on Friday, and passed recommendations for the construction of by-pass roads at Sutton, Epsom, and the south circular road. A recommendation was also carried pointing out the desirability of preparing estimates as soon as possible so that the probable cost of the respective improvements might be available, and that in the event of unemployment following the war, or otherwise, information as to a useful outlet for labour will be readily available.

The urban district council of Porthcawl has received the sanction of the Local Government Board to borrowing £8,000 for providing a new water main.

The public parks committee of Edinburgh Town Council have agreed to recommend the town council to grant a site for the Gladstone statue in East Princes Street Gardens.

The partnership hitherto subsisting between H. Goddard and A. H. Youles, brickmakers, at the Heston Brickfields, Heston, Middlesex, under the style of Herbert Goddard and Co., has been dissolved.

A new variety theatre with winter garden attached is to be built on the site of Meux's Brewery at the corner of Oxford Street and Tottenham Court Road. The brewery will be removed to Nine Elms, S.E.

Mr. C. J. Robinson, of Ilkeston, has been appointed gas manager and engineer to the Spalding Urban District Council, in the place of Mr. H. R. Wimbush, who has obtained an appointment at Bury St. Edmund's.

The partnership hitherto subsisting between W. Sanderson and W. Flower, carrying on business as builders and contractors at Whitehill, Southampton, under the style of Sanderson and Flower, has been dissolved.

New council schools at Burnham provided by the Somerset education committee have been opened. Messrs. Samson and Colthurst, of Bridgwater, were the architects, and Mr. H. W. Pollard, of Bridgwater, was the contractor.

A new church is about to be built at the junction of Blackness-road and Seymour-street, Dundee, for the St. David's-in-the-West U.F. congregation. The architect is Mr. W. J. Walker Todd, of Messrs. Todd and Miller, architects, Edinburgh.

The urban district council of Watford have received sanction from the Treasury to borrow £26,000 for linking up the new pumping and softening plant to the present water-supply system. The new reservoir will not be proceeded with at present.

At the town-hall, Bradford, a Local Government Board inquiry has been held by Mr. A. G. Drury regarding an application by the Corporation for permission to borrow the sum of £2,977 for the purpose of reconstructing cells at the Sunbridge-road refuse destructor works.

Mr. Joshua Lambert, A.M.Inst.C.E., Mem.R.San.Inst., and F.Inst.San.E., deputy engineer and surveyor to the Tottenham Urban District Council, has been unanimously appointed acting engineer and surveyor, and Mr. Walter Vincent, the next assistant, as acting surveyor to the education committee during the absence of Major W. H. Prescott, R.E., M.Inst.C.E., on active service.

Mr. Thomas Adams, of the Commission of Conservation, Ottawa, till recently on the staff of the Local Government Board, London, lectured recently in Winnipeg on the subject of Town Planning. Mr. Adams's address was aided by a map showing the character of a town-planning scheme in Great Britain involving 5,900 acres. He congratulated Winnipeg on the work which the Town Planning Commission had performed in the last four years. He said that the city, with its wide thoroughfares, offered a splendid field for such planning.

The Birmingham Reference Library has just been enriched by some important gifts. From Mrs. E. Bickerton Williams the committee have received an interesting collection of documents relating to Aston Hall and its owners in the eighteenth century and other matters of interest in "Old Birmingham," with a number of old maps of the town and a collection of books. Mr. Alfred J. Zimmerman has presented a valuable series of MS. and printed maps of Birmingham, some of them marked to show the extent of the large estates, and one which is evidence of a "town planning" scheme for the centre of the town as early as 1789.

Mr. Joseph William Duffield, of Palace Place Mansions, Kensington Court, and the Palace Works, Kensington, builder, who died on March 10, left estate valued at £14,318 gross, with net personalty £2,619. He directed that the silver jug and loving cup presented to him at the close of his term as churchwarden of St. Mary Abbots, Kensington, should be offered to South Kensington Museum. He bequeathed £500 to the vicar and churchwardens of St. Mary Abbots for the repair of the outside fabric; £100 to Moses Reed, his faithful workman; £100 to his yard foreman; £200 for the ten workmen who have been in his employ the longest time; and to the London Benevolent Society of Master Builders any unpaid part of a promised sum of £105.

The salary of Mr. H. Bannister Eames, surveyor to the Bicester Rural District Council, has been increased by £50 per annum.

The Watford Urban District Council have obtained the sanction of the Local Government Board to a loan of £26,000 for waterworks extensions.

The authorities of Winchester College have agreed to the revised scheme for improving the corner of St. Cross and Beaufort Roads, at the southern approach to the city of Winchester.

On the occasion of his marriage Mr. P. A. Benn, the city surveyor of Lichfield, has been presented by the members and officials of the Corporation with a Sheraton drawing-room timepiece.

Among the most interesting of the archaeological works lately taken in hand at Delhi, is the conservation of the ruins known as the Kotila, or citadel of Firozabad, the city built in the early part of the fifteenth century by the Pathan Firozshah.

An eastern wing just added to the Technical Institute at Keighley was opened by Viscount Bryce last week. It will be appropriated largely to instruction in engineering—general and technical—in which most of the adult males of the town are engaged.

The Oswestry Town Council and Oswestry Rural District Council will oppose to the utmost the Shropshire County Council's scheme for the provision of a joint isolation hospital for the local authorities comprised in the north-west portion of Shropshire.

As a memorial to Miss Japp, a former Lady Mayoress of Liverpool, three windows in one of the transepts of Sefton Park Church, in that city, have been filled with stained glass, representing Prudence, Love, and Humility. The designs are by a pupil of the late William Morris and Burne-Jones.

The Archbishop of Canterbury will preach the sermon to-morrow (Thursday) evening on the occasion of the re-opening services at St. Thomas's Church, Lambeth. The Bishop of Southwark will consecrate the new chancel and dedicate the baptistry, vestries, organ, and church rooms.

Mr. Martin Van Straaten, of 63, Avenue Road, Hampstead, N.W., of the firm of Messrs. Martin Van Straaten and Co., enamelled tile manufacturers, of Little Britain, E.C., who went down in the Lusitania on May 7 last, aged forty-nine, left estate of the gross value of £34,479, of which the net personalty has been sworn at £32,760.

At the last meeting of the Surrey County Council it was announced that Mr. T. W. Aldwinckle, F.R.I.B.A., of Denman Street, London Bridge, S.E., had accepted the appointment of architect for the proposed tuberculosis sanatorium at Sattenham, near Godalming, and had been instructed to proceed with the preparation of plans.

The Right Rev. Dr. Paul, Moderator of the General Assembly of the Church of Scotland, has laid the foundation-stone of a new parish church at Culter, near Aberdeen, to take the place of the existing edifice, which was originally built as a mission hall. The plans have been prepared by Mr. A. Marshall Mackenzie, A.R.S.A., Aberdeen, and the building will provide seating accommodation for 400. The cost is estimated at £4,500.

Mr. William Dalton Ironside, a prominent Aberdeen civil engineer, has died at his residence, Rubislaw Den South, at the age of forty-nine years. He was a partner in the firm of Messrs. Walker and Duncan, land surveyors, Golden Square, Aberdeen, and carried out several important contracts in the district, among them at Abergeldie Castle, Duncecht House, the residence of Lord and Lady Cowdray, and other district mansions, while he had charge of the erection of a steel girder bridge over the Don at Monymusk.

The Governors of the Royal National Sanatorium, Bournemouth, at their annual meeting, held recently under the presidency of the Earl of Eldon, decided to recommend for consideration by the committee of management a scheme for the establishment of a sanatorium and home on a site eight miles from Bournemouth. Here there could be erected simple buildings to accommodate, say, forty patients. Sleeping accommodation could be provided in two pavilions of twenty beds each, the administration block being more substantial. To the farm or colony could be drafted all patients who, after selection, were considered suitable for employment on various grades of work. This scheme would have the advantage of separating the advanced and more or less hopeless cases from those who were only slightly affected.

MEETINGS FOR THE ENSUING WEEK

FRIDAY.—National Road Conference at the Royal Horticultural Hall, Westminster. To close on the following Thursday, July 1.

SATURDAY.—St. Paul's Ecclesiological Society. Joint Day Visit with the Seaborn Society to the Churches of Leighton Buzzard, Southbury, Steadley and Wing, conducted by G. J. B. Fox. Train from Euston Station (L. and N.W.R.), 9.10 a.m.

Association of Managers of Sewage Disposal Works. Visit to the Sewage Disposal Works of the Wealdstone Urban District Council. 3 p.m.

TUESDAY.—Society for the Promotion of Roman Studies. "The Influence of Religion on the Rise and Continuance of the Roman Empire," by Viscount Bryce, O.M., Society of Antiquaries' Rooms, Burlington House, W. 4 p.m.

WEDNESDAY (June 30). Royal Archeological Institute. Burlington House. 4.30 p.m.

TO ARMS!

Central London Regiment Volunteers.
4th Battalion "Architects."

RECRUITING.

Recruits are urgently needed for the Regulars, Territorials, and Volunteers. Intending recruits should apply to the Battalion Headquarters, where they will be advised as to the branch of the service for which they are best suited.

ORDERS FOR THE WEEK BY Lieut.-Col. A. W. Warden:—

274. SPECIAL NOTE. GENERAL PARADE. Saturday, 26th inst.—The parade at Hadley Wood Station is cancelled. See Order No. 275 below re General Meeting.

275.—GENERAL MEETING.

Thursday, 24th inst., at 8 p.m., at the R.I.B.A., 9, Conduit Street, London, W., to decide on Standing Camp by the River for week-ends for the purposes communicated in circular-letter of to-day's date to all members. The attendance of all members is urgently requested.

276.—DRILLS AND PARADES.

"A" Coy.—Tuesday, Miniature Range, Gas Light and Coke Co.'s premises, Monck Street, Westminster, 5 to 8.30 p.m.

School of Arms and Signalling, Millbank School, Erasmus Street, Westminster, 6 to 8 p.m.

Wednesday, Company Parades, 5.15 to 7.15 and 6.15 to 8.15, at Dean's Yard, Westminster. If wet these parades will be held at Millbank School. Notice will be posted in vestibule at Headquarters.

Note.—There will be no Company Parades on Fridays at Dean's Yard until further notice. For Recruit Drills see below.

Thursday, Signalling in Hyde Park, 6 to 8 p.m. Meeting at Marble Arch, 6 p.m.

"B" Coy. Miniature Range and Wednesday Coy. Parades as for "A" Coy. See also Orders at Local Headquarters.

"D" Coy. Platoon and Section Drill at Mercers' School, Holborn, Tuesdays and Thursdays, 6.45 p.m. Coy. Parade, Wednesdays, at Dean's Yard.

RECRUITS.

A number of recruits are required to replace those recently joined the Regular and Territorial Armies, or who have obtained Commissions.

RECRUIT DRILLS.

"A" Coy. Dean's Yard, 5.15 to 7.15 and 6.15 to 8.15, Wednesdays and Fridays.

"B" Coy. Dulwich College, Mondays 8 to 10. Thursdays 6 to 8 p.m.

"C" Coy. Reforming with new headquarters.

"D" Coy. Mercers' School, Tuesdays and Thursdays, 6.45 p.m.

277.—SCHOOL OF ARMS.

Millbank School. Instruction in bayonet fighting, gymnastics, physical drill, boxing, and single sticks on Tuesday evenings from 6 to 8 p.m.

278. COMMITTEE MEETING.

A meeting of the Civil and Military Committees is called for 7.15 p.m., Wednesday, the 30th inst., at Battalion Headquarters. A full attendance is requested.

CORRESPONDENCE.

Enrolment forms of new members, and all correspondence not referring to recruiting for the Army or to financial matters must be addressed to the Adjutant, 10, Conduit Street, W.

Correspondence regarding recruiting for the Army and payment of subscriptions and accounts should be addressed to the Paymaster at Battalion Headquarters.

Members applying for Commissions in the Regular Army or Territorials are reminded that their papers should be sent, in the first instance, to the Adjutant's Office, when they will be forwarded to the proper quarter for signature. Applications should be accompanied by a letter from Members' Platoon Commander.

Battalion Headquarters, 18, Tufton Street, Westminster, S.W.

By Order.

L. R. GUTHRIE, Adjutant.

We learn that the cement work in connection with the Bicester Rifle Range has been treated with the powder Pudlo to ensure same being waterproof.

Major L. T. Burnett, 4th City of London Regiment (Royal Fusiliers), has been gazetted a temporary Lieut.-Colonel. Major Burnett is the son of Sir David Burnett, F.S.I., and attains command of his battalion at the early age of thirty.

120, Bunhill Row, London, E.C.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House,

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OUR ILLUSTRATIONS.

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Church of St. Nicholas, Taplow, Interior, looking east, and plan, Mr. George H. Fellowes Prynne, F.R.I.B.A., Architect.
Trewinnard Court Boarding House, Truro Cathedral School, View and plan, Mr. Frank L. Pearson, F.R.I.B.A., Architect.
The Engineering Laboratory, Banbury Road and Parks Road, Oxford, Elevations and plans, Mr. William C. Marshall, M.A., Architect.
The Dominion Observatory, Little Saanich Mountain, B.C. Mr. E. L. Horwood, Architect.
The Fire Protection of St. Paul's Cathedral.

STEPNEY MUNICIPAL BUILDINGS COMPETITION.

WITH ILLUSTRATIONS.

The hundred and seventy designs for this group of buildings are on view this week, till Friday evening next, in the Whitechapel Art Gallery, Aldgate East. The drawings are displayed in both the upper and lower big rooms, but no attempt seems to have been made to classify even roughly the unsuccessful designs. Had the galleries been on one level this lack of arrangement would not have mattered so much. As it is, some of the best schemes are shown downstairs in out-of-the-way positions, hanging side by side with the most indifferent proposals. Having so much material to exhibit it would have been better to have gathered together the cream of the competition in the same apartment, so as to facilitate a comparison and expedite a more exact idea of their respective merits. We have no doubt whatever as to the justice of the choice of the selected design, but must confess to an impression that the relative values of a few of the more capable plans have possibly not received the attention which they deserved. Anyhow, the result can in no sense be termed a foregone conclusion, seeing that the contest has really been a strenuous one, and many excellent schemes undoubtedly have been submitted, consequently the winning architects can hardly claim to have achieved a walk-over. It is quite easy to understand that the assessor found his task by no means an easy one; indeed, this competition is one of those contests in regard to which not many critics will readily endorse the referee's allocation of the three premiums. The authors of the chosen scheme obtain no money prize, but are to receive the commission, carry out the job, and be paid on the remuneration schedule authorised by the R.I.B.A. Three premiums were offered in addition.

The site is an exceptionally advantageous one, four-square, and facing on the south or main frontage Arbour Square, Commercial Road East. The two Arbour Streets, "East" and "West," extend along the side flanks of the premises, and an open courtyard remains to the north at the rear. The cost was to be reckoned on the uniform stipulated rate of one shilling and sixpence per ft. cube, so that on this agreed basis no room was left for uncertainty, as often happens, about the intention of the promoters in the matter of cost. Notwithstanding, the estimates seem to vary more or less from something like £70,000 to £90,000, according to the compactness of the planning or otherwise controlling the lay-out adopted by various architects. Their differing plans, on the other hand, do not invariably follow any recognised uniformity of scheme for the

locating of the several departments, some competitors placing the borough engineer on the topmost floor, while others put the lady health visitors' rooms on the ground floor level close by the main entrance. The same uncertainty prevails with most of the other leading requirements, consequently it is difficult to determine these departmental relationships adopted in one scheme as compared with another. The architectural treatments are very diverse, and personal taste asserts its preferences, as it inevitably will do, though this difference is minimised because the majority of the proposals under review are based in some degree upon the popular style of the Latest Classical Renaissance. Not one design possesses any outstanding originality for a municipal façade of importance, although the average attained is perhaps all round above the usual standard. As a rule, the drawings are workmanlike and praiseworthy, while the designs evince a sense of scale and bigness in their handling of the problem. Certainly the Borough of Stepney has much reason to be satisfied with the result of their competition enterprise, having insured an excellent building.

Mr. Henry T. Hare, the assessor, has made the following award, which has been confirmed by the authorities. No. 117, placed first, is by Messrs. Briggs, Wolstenholme and Thornely, of Liverpool. No. 167, by Mr. W. Frazer Granger, of Canterbury Road, Brixton, is given the first premium of £100; Messrs. Ambrose Poynter and G. H. Wenyon, of South Moulton Street, W., second premium of £75, and Messrs. T. Darbyshire and F. A. Collard, of Tooting, the third premium of £50.

THE SELECTED DESIGN, herewith illustrated, has a lower ground floor adroitly managed to fully accommodate the borough treasurer's offices at the rear, the section showing how this large department is extended into the main or ground floor. Above this the council chamber is situated, and that fine apartment terminates in a detached cruciform building, allowing light to freely reach the flanking areas below where they are smallest. The position of both the treasurer and the council chamber in this scheme is common to several of the competition proposals, but none of them equals the straightforward and direct planning by which this excellent lay-out is managed. The council chamber is reached from the grand staircase, set in the centre of the premises and rising directly in front of the main entrance. On the first floor two cross corridors, on either hand of the staircase, lead distinctively by way of ante space approaches. There are two capital secondary or official staircases in the wings beyond the pair of square areas,

already spoken of, and these give ample light to the adjacent rooms and immediate surroundings. They each measure 37 ft. by 25 ft. on the ground floor, and get much larger with cross light space above. The first floor is set out efficiently with the town clerk's private room separated by an ante chamber from the mayor's parlour at the extreme end of the main front, along which six committee rooms are placed, the largest of the series facing the return towards Arbour Street West. The town clerk's general office is put at the back, and figures 40 ft. by 33 ft. The council chamber is 57 ft. square, and has aisles round. Above that on the west the public gallery faces the chair, the seating for members being quadrant in setting out. Good space near the exits is provided for the Press. The members' robing room and lavatories are close by, with through ventilation into the courtyard on the rear front. The public have a distinct entrance from Arbour Street West to the gallery, and use the subsidiary stairs on that flank. The electric engineer's department is behind the town clerk's part of the building. The drawing office has a free north light. The surveyor occupies the ground floor to the left, and the chief clerk's department is to the right of the front doorway. The sanitary inspectors, medical officer of health, and lady health visitors' rooms are on the second floor, where the caretaker's quarters and the kitchen are located. Architecturally a severe Doric order gives the keynote to the façade, the central part of which is recessed to allow of a bold colonnade, which is repeated in the end pavilions by introducing a pair of columns to flank the windows recessed there as a foil to the frontispiece. There is a simple plain attic above a refined and handsome cornice, with a Greek-like entablature. Recumbent lions face the entrance, which is spaced into three bays. The intervening fenestration is plainly handled, giving reserve, in sympathy with the stern simplicity of the more monumental middle part of the elevation. The design in execution suggests a distinctive success at the hands of Messrs. Briggs, Wolstenholme, and Thornely.

THE SECOND PLACED DESIGN.

by Mr. W. Frazer Granger, has a far less direct lay-out, but the entrance occupies the same central importance externally. Inside the vestibule is placed under the chief staircase, which rises both to the right and left, joining in a middle flight above and leading to the council chamber set at the rear in a similar position to the first plan. Here, too, there is a pair of areas for light, but they go up through the top floor, and so are unduly tall. The council chamber is 50 ft. square, and the public gallery comes over its entrance

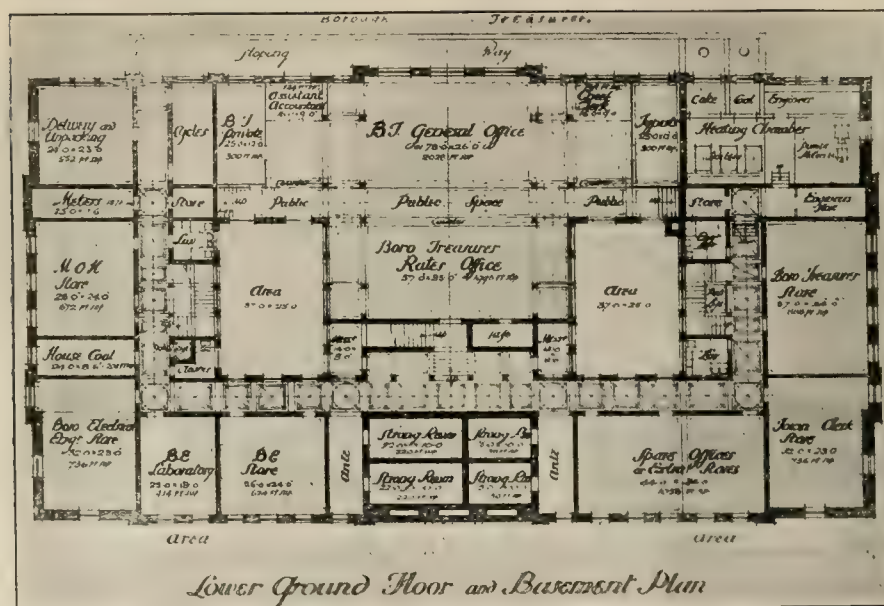
side, facing the mayor's chair. On the ground floor the electricity department comes to the right, and the borough treasurer is set on the left. The rear elevation projects at the ends and the front towards Arbour Square is broken by protruding the middle main part of its façade. The mayor's parlour is set at the extreme west end, while the town clerk occupies a similar situation in the east front on the first floor, where his offices extend northwards. The committee rooms are along the south overlooking Arbour Square. The borough engineer is put on the second floor front, and the windows of his drawing-office have a west aspect, though the north projection in which the room is planned has its external wall occupied by a fireplace. The medical officer's chemical laboratory has a similar position in the east corner, with the bacteriological laboratory adjoining. The public gallery entrance is in the basement on the rear courtyard side not so well supervised by the police as if placed off the public street. The front elevation is colonnaded into seven bays, the middle one being wider than the others to give emphasis to the portal, and the Doric order is adopted,

give a bold effect, but the building, so sturdy and stately, seems sadly in want of a good plinth. The ample windows insure needed light, though the effect is not quite so happy in the relation of voids to solids architecturally. This is a well-drawn set stippled nicely to Frenchify the get-up. The medical officer's department stands on the right of the central portico, and the electrical engineer comes to the left on the ground floor. The treasurer's and rates offices are put at the back 129 ft. by 29 ft. 6 in., so there is plenty of room spaciouly lighted. The main stairs are in the centre of the building, and consist of one flight on both hands of the lower through-way corridor going north to the rates department. The council chamber is too long in its proportions, 79 ft. 6 in. by 31 ft. 6 in. The committee rooms range along the front. The mayor's parlour is put on the west of these. We discover at last the borough engineer is upstairs on the second floor, and the town clerk's department is on the same level, too. The areas for light continue from top to bottom of the same size, and do not enlarge as they proceed like they do in the chosen plan. This proposal, however, is

the back, reached by side-street doors on the flanks, but the department is isolated from the main front entrance. The council chamber comes over the treasurer's public office, and measures 76 ft. by 43 ft. 6 in. The committee rooms extend along the south front, and the town clerk's private room is put near by the mayor's parlour on the east. The corridors in the side wings depend on borrowed light, but the main cross corridor gets direct light from the areas. The borough engineer is set on the ground floor, the health and electricity departments to the rear, and the subsidiary staircases are on the north frontage. There is no second floor to this scheme.

Hanging hard by the last set of premiated plans are those sent in by Mr. Edwin T. Cooper, whose façade in some respects much resembles the chosen one. He has a capital plan. The general office of the borough treasurer comes on a lower ground floor at the back, and very large accommodation is provided for the rates department, the payroom being of 2,028 ft. super., and the treasurer's reception space 2,193 ft. super., with ready-to-hand entrances and counter spaces both from the east and from the west. If the paying-in people happen to go to the wrong street, they must walk round the whole building to reach their proper door. The town clerk is next the entrance on the ground floor, ready to be interviewed on the left. The medical officer's department is to the right. The electricity showrooms behind are reached from either side of the main staircase by short, well-lit corridors, and similar direct lighting for all passages distinguishes Mr. Cooper's workable scheme through all its levels. Both the lift and the porter are admirably placed near the entrance. The council chamber we do not like, as it is too long a room, 84 ft. by 34 ft., with a deep diaper-coffered coved ceiling and top lighted, like an art gallery, while the seating on quadrant lines looks very out of accord with such a shape; therefore we do not reckon it a success. The flanking committee rooms in the side streets are divisible with folding iron screen, and the council accommodation would occupy the whole of the first floor. The engineer takes the bulk of the second floor, but the caretaker's rooms come on the east side. The building is designed outside very much on the lines of the Marylebone Town Hall ("only better," we understand), with a handsome Corinthian ordered façade and urns on the top of the balustraded parapet. The columns are fluted, and rise from the upper stone step at the entrance.

Space precludes more than the briefest allusion to some other designs, like No. 152, Mr. W. G. Wilson's proposal, with its overweighted upper part in the Greek-like façade. The cost of this scheme he puts down at £76,000. No. 69, b Messrs. Ivor Jones and Percy Thomas, of Cardiff, is in the same style, with a pedimented centre and a council chamber 79 ft. by 40 ft. Messrs. Stevens and Gregson, of Westminster, have a crowded-looking council chamber 72 ft. by 36 ft., with a lift and porter's office similar to Mr. Cooper's. Mr. C. Wontner Smith, No. 138, is in a good old Georgian fashion, with a clever plan. No. 133, by Messrs. Mewes and Davis, also excellent as a scheme, but commonplace in its elevation, with details of a familiar type. Messrs. Flockhart and Guthrie, No. 124, send a very picturesque proposal, with arched mural treatments of pleasing detail and a telling plan, with a mezzanine floor. Mr. P. A. Robson, No. 114, has a well-massed if somewhat ordinary centrepiece, and too



STEPNEY MUNICIPAL BUILDINGS.

SELECTED DESIGN, BY MESSRS. BRIGGS, WOLSTENHOLME, AND THORNELY, F.F.R.I.B.A.

flanked by pedimented pavilions with panelled wall piers, rather French in manner, and above all this occur enriched blockings carved with mural figure work and scrolls. The attic of the main block of buildings is carried advisedly much higher and behind a parapet resting on the big entablature. Large stone-built lamp piers occur along the site on the curb line of the footway. The small side doorways to this front add to the scale of the composition, which has the distinct merit of breadth, and the drawing is excellently outlined, but the carving is hard-looking.

THE THIRD DESIGN.

Messrs. A. Poynter and Wenyon, who are given the £75 premium, adopt the Ionic order, using it in seven bays in the middle of the Arbour Square front, and they place iron balconies to the first floor windows in the recessed interspaces of their colonnade. A bold attic along the main portion of the block rises handsomely in the midst with a hipped roof behind, but which in reality will not be seen. The plain, rusticated ends at the E. and W. terminations of this façade

architecturally contrived and capitally arranged, both square-looking and comely, with good secondary staircases; but still we doubt whether some other proposals are not actually more suitable, and might have been given the preference.

THE £50 PREMIUM DESIGN,

which is the fourth in order of placing, is the work of Messrs. T. Darbyshire and Collard. Their front elevation is more broken up than the others, and has a big stone looking turret in the central line of the big, lead-covered, hipped roof extending along the whole façade. The digressions on plan are not perhaps enough to warrant so marked a distinction as here given, because the projections are very slight as compared with this elevational display. The treatment is in masonry, and rising with an ornamental attic above the side pavilions enclosing the front Ionic colonnade of four bays. Four chimneys distinguish the skyline, and the chimneys assume even more importance in the balance of things along the side elevations, which are simply repeats. The plan has a staircase in the midst, with an enormous office for rates business at

ample a length of corridors, causing too much perambulation. Messrs. Clifford and Lunan, of Glasgow, in No. 95, show a well-composed group, with perhaps an over-broken skyline. No. 86, by Mr. Clyde Young, is marked by a mansard roof and a good French-like elevation, based on a simple lay-out of plan architecturally contrived. Mr. James Miller, A.R.S.A., has a very distinct design not to be passed over so easily, but the spotty effect of his detail drawing does the façade an injustice, and gives a restless look quite foreign to it (No. 58). Messrs. Nicol and Nicol, of Birmingham (No. 45), Messrs. Crouch, Butler, and Savage (No. 4), and Messrs. Buckland, Heywood, and Farmer, near neighbours to each other, all submit creditable designs. No. 42 is by Mr. Frank Atkinson, with an unpretentious set of drawings and big Ionic columns. The central window to a small committee room on first floor seems far too wide, even if it does form a counterpart to the portal. Mr. C. T. Armstrong is not so successful as usual. In No. 26 Messrs. Lanchester and Rickards remind us of their Rococo Town Hall at Deptford, only with a bigger pediment added. We have taken notes of many others, but must end with the mention of some further names, such as Messrs. Nicholson and Corlett, J. Winkler Wills and Kaula, J. B. Fulton, J. Brooke and Elcock, S. B. Russell, Wm. Woodward and Sons, H. S. East, and Bateman and Bateman, also Professors Beresford Pite and S. D. Adshead, Messrs. J. S. Gibson, Skipworth and Gordon, Mr. C. T. Adshead, of Manchester (with a refined front), Mr. T. A. Moodie, and Messrs. Greenaway and Newberry.

THE REVIVAL OF MOSAIC WORK IN ENGLAND.

The last quarter of a century has seen a distinct and important revival in this country of the beautiful art of mosaic laying. Practical illustrations of this exist in St. Paul's Cathedral and in Westminster Cathedral, to which I may, perhaps, now refer. The Romans excelled in this art, more perhaps in pavements than in mural work, and remarkably fine specimens are to be seen in the British Museum. Carthage (in work of the third century A.D.), Halicarnassos, and Woodchester present fine examples of the proper treatment of mosaic in conventional and naturalistic design, beautified by colour and gold, the work embracing figures, animals, birds, fishes, hunting scenes, etc. The size of the tesserae varies from one-eighth of an inch to one-quarter of an inch on the surface, being reduced for the smaller details and increased for the broader effects.

The treatment of mosaic work in Greece, in the Byzantine style, is well illustrated in the careful and painstaking studies of Mr. Robert Weir Schultz and Mr. Howard Bainsley in their work entitled "The Monastery of Saint Luke of Stiris in Phocis, and the Dependent Monastery of Saint Nicolas in the Fields, near Skipton, in Boeotia." Fine conception, dignified drawing, beauty and harmony of colour, are all fully portrayed in this monastery, which was built about the beginning of the tenth century. Gold was freely used in the cubes, and Messrs. Schultz and Bainsley describe with interesting detail the technique which was adopted in this early work. The method of fixing the mosaics was, they say, as follows:—"Over the structural brickwork of the surfaces to be covered a coat of plaster was spread, this, like the first coat of plaster in ordinary wall coverings, was roughened on the face in order to make a second coat of finer stuff adhere. On the surface of this second coat, which was evidently of a very

slow-setting nature, the main lines of the mosaic figure or composition were sketched on in tune with a brush, and the mosaic cubes were then pressed into this from the face, forcing up the stuff between the cubes in order to act as a key. I am inclined to think that, at any rate in the case of the single figures, the first cubes put in position were the double or treble row of gold tesserae which enclosed the subject; we have found in many cases that these do not correspond with the lines of the figures as executed, odd spaces between the lines and the final outline of the figure having been filled up with further gold cubes after the mosaics of figure had been finished in position. The backgrounds are universally formed of gold tesserae, while the figures and subjects are composed of cubes of many colours and gradations of tone. The principal coloured cubes are cut out of sheets of opaque coloured glass, while the lighter ones, such as the flesh tints, etc., are of marble. The gold mosaics are formed in the usual manner: a piece of gold leaf having been laid on glass, a thin transparent film was then spread over the same, and the whole afterwards annealed to a solid mass. The cubes do not vary greatly in size, the average being about three-eighths of an inch. They are, however, slightly larger in the main outlines of the draperies, etc., and smaller in the delicate gradations of the face and hands. The main portion of the gold background is laid fairly regularly in horizontal lines, up to the rows enclosing the subjects. The drawing of the figures and of the subjects generally is usually very stiff, and the whole tenor of the work indicates that there was a fixed and established tradition by which every subject was set out according to a defined rule and description, which was adhered to even down to minute details."

The mosaics at St. Mark's, Venice, are well known to most of us, and the technique there has probably the same foundation as that at the monastery, and although the authors of the book on the monastery have not referred to it, the probability is that the cube was pressed into the plaster irregularly, not exhibiting only the one flat surface which characterises the earlier mosaic work in St. Paul's. The result of this irregularity is that more than one facet of a cube is presented to the eye; variety of play and of light and shade ensues, and produces that beautiful effect which distinguishes Sir William Richmond's work in St. Paul's. A meander through the choir and through the choir aisles of St. Paul's is sufficient to prove the excellence of the recent work in mosaic as compared with the earlier mosaic which is to be seen in the spandrels of the arches under the gallery of the cupola. Here we have bad drawing and ugly design; the figures of the saints are meaningless, and the cutting of the angels' wings to the curved line of the cupola is unfortunate. All this, with the figures in the niches of the cupola, should be cleared away, and mosaic work of design and execution similar to that by Sir William Richmond substituted. This should be extended to the whole of the cupola; the windows in the cupola should be treated with stained glass similar in effect to that in the windows of the apse and of the north and south transepts, and we should then possess a work of art which might fittingly constitute a memorial of the peace after the present war.

In considering the treatment of Westminster Cathedral we are not confronted with the difficulties which apply to St. Paul's. Here we have a vast and impressive interior of fine proportions, left by its architect in bare brickwork de-

signedly for future decoration. The choir, the Lady chapel, the chapels on the north and south sides, and the crypt chapel all appeal for flesh to be laid on the skeleton, and one must congratulate the pious donors and the authorities who have controlled the gifts for the headway already made in the final completion of the wall surfaces. It should be assumed that in the work done the future of the general effect in the whole of the cathedral has been borne in mind, and it may not be out of place to consider what this effect is likely to be. A considerable part of the surfaces has been covered with marble of varied colours, and, beautiful as this marble is, its very variety is disturbing, and, for a cathedral, unsatisfactory. It is stated that there are in this cathedral no less than thirty-three varieties of ornamental and decorative stones employed in the different chapels and in the sanctuary. A large proportion of these thirty-three varieties consists of cold, grey, streaky marble—uneclesiastical (if I may use the term), and quite out of harmony with much of the mosaic work introduced. This is particularly observable in the lower parts when the upper parts are rich in colour, and it is to be hoped that in the future work the richer marbles will be employed below and the lighter in colour above; but, in all cases, these cold, grey, streaky marbles should be abandoned and study made of the marbles in the Monastery of St. Luke of Stiris. A striking example of the incongruity of the grey marble at Westminster is seen in the large square pier at the south-western end of the nave.

As to the mosaic work, which may be taken as more or less of an experimental character, we have a variety, but there are two examples, so very different in their treatment, that some criticism may be devoted to them from that point of view. In the crypt chapel the soffit of the arch to the recess which contains the recumbent figure of Cardinal Manning has been laid with mosaic from the designs, I believe, of a Russian artist. Distinctly Byzantine in feeling, the technique is crude, and the drawing—particularly in the figure work—deficient in expression. The other example is perhaps the most important in the cathedral—that in the "Chapel of St. Andrew and the Saints of Scotland" in the south aisle. The first impression gained is one of great richness in tone, enhanced by the fine effect created by the gold mosaic in the vaulted ceiling. The walls produce a glow and intensity of colour suited to the light of the chapel, but this is marred by the unfortunate grey marble at the base of the mosaic work. Richer marble or mosaic work should be substituted for the grey marble, so that harmony and balance may be created with the work above. In mosaic work due regard should always be had to its distance from the eye, and in some parts of the work in this chapel the details appear to be rather too small, and suggest greater breadth of treatment. The white marble in the soffits of the windows should obviously be replaced by mosaic, as the want of continuity in tone is very marked. One very satisfactory feature of the mosaic work in this chapel is that it is being laid in the same method as that adopted by Sir William Richmond in St. Paul's and by English artists.

I venture to express the fervent hope that the mosaic work in St. Paul's will proceed in friendly rivalry with that at Westminster, and that the revival of mosaic decoration in England will not rest at the point we have now reached.

WM. WOODWARD, F.R.I.B.A.
Church Row, Hampstead.

HYDRATED LIME AND ORDINARY LIME.

By E. W. LAZELL, Ph.D.*

Everyone is familiar with the fact that when quicklime is treated with water a violent action takes place, the lumps of lime break up, heat is generated, steam is given off and after the action is completed, a paste or putty remains—the ordinary lime putty used for mortar. The fact that quicklime has changed its form from dry lumps to a wet paste and that heat has been generated prove that a chemical reaction has taken place; or that quicklime has combined chemically with water. It is a scientific fact that when any chemical change or reaction occurs exact amounts of the material are involved. In the chemical change which takes place when lime is quenched with water definite amounts of lime and water are involved; in slaking lime an exact amount of lime unites with an exact quantity of water, forming an exact amount of hydrated lime and it differs from the original quicklime, and if water is present to satisfy the calcium oxide (lime) then a dry powder will remain. This powder is hydrated lime and it differs from the original quicklime and from pulverized lime in its behaviour towards water. When water is added to hydrated lime no heat is generated nor does the material slake, thus indicating that water has no further chemical action on the hydrate.

What is Hydrated Lime?—Hydrated lime of commerce is the dry powder resulting from the treatment of lime with sufficient water to satisfy the chemical requirements of all the calcium oxide.

Necessity for Exact Proportions of Lime and Water.—In the foregoing, emphasis has been laid upon the fact that precise amounts of lime and water react chemically. In other words, 1 lb. of lime requires a certain definite amount of water to form a perfect hydrate. If too little water is used in quenching the lime in the process of manufacture, the lime will be burned in slaking, and free lime, or lime which is not combined with water, will be present in the hydrate, rendering the material unsound. Plaster made from such hydrated lime will later pop and pit, due to the gradual slaking of the free lime by the moisture present in the atmosphere. Further, mortar made from such unsound hydrate generally works tough and non-plastic. The free, uncombined lime when present to any considerable extent will dry out the mortar, rapidly decreasing its strength and causing it to crumble. Free lime in hydrated lime is a dangerous ingredient and one which will always give trouble.

If too much water is used in the preparation of hydrate the material will be damp and wet, rendering it difficult to handle.

Obsolete Methods of Manufacture.—In the past, three methods were used to produce hydrated lime:

(1) Small pieces of lime were placed in a basket and immersed in water for a few minutes, until slaking began, when they were withdrawn and placed in a heap in order to conserve the heat and prevent the escape of the vapour; the material swelled, cracked and became reduced to a dry powder.

(2) Lumps of lime were placed in a heap and wetted at intervals until the mass was equally moistened throughout. The slaking proceeded as in the first instance.

(3) Small pieces of lime were exposed to the air for a number of months, and the lime absorbed both water and carbon dioxide from the atmosphere, falling to a dry powder. The powder consisted of dry sub-carbonate of lime containing about 10 per cent. to 11 per cent. of water.

These three methods of dry-slaking lime were crude, and unless the greatest care was exercised the resulting product contained particles of unslaked lime. The hydrate produced by these methods was generally short and possessed poor sand-carrying capacity; in fact, hydrated lime made by any of the above methods was suitable for use in agriculture only, and such hydrate should not be confounded with hydrated lime manufactured by modern methods.

Modern Methods of Manufacture.—The modern method of manufacturing hydrate depends upon the addition of a definite amount of water to a predetermined amount of lime. By no other method is it possible to produce a hydrate which will contain sufficient combined water to satisfy the demands of the calcium oxide (lime) present. It is of the utmost importance that all the calcium oxide be in combination with water, otherwise the hydrate will be unsound and unsuitable for building uses. That all the lime be satisfied with water will be insisted upon in any specification which may be drawn for hydrated lime to be used in the building trade, and it is vital for each manufacturer to recognise that the formation of hydrated lime involves a chemical change requiring the presence of exact amounts of lime and water. Since the process is chemical, it requires the same careful supervision as any other chemical process—such as the manufacture of Portland cement. The production and use of hydrated lime have been more retarded by the manufacture of only partly hydrated lime than from all other causes. Any method of manufacturing hydrated lime, continually to produce a perfect product must be based upon weighing the lime used and measuring the amount of water added.

ADVANTAGES OF HYDRATED LIME.

From the Standpoint of the Manufacturer.—One of the great difficulties in connection with the manufacture of lime is the perishable quality of the product. Lump lime cannot be stored for any length of time without deterioration, thus making the operation of the plant dependent upon the season and the whims of the weather. Kilns must be fired up, damped down, or put out, according to the season of the year and the condition of the weather. This unevenness of operation results in a high unit cost. Since hydrated lime can be stored in bins in a manner similar to cement, it is possible to make the operation of the plant more nearly continuous, thereby introducing economies in the manufacture and reducing the cost. The manufacture of hydrate also means a more extended market, as hydrated lime can be used for a number of purposes for which quicklime is not suitable.

Advantages to the Dealer.—Three principal advantages to the dealer are the ease in handling, less deterioration of the product, and the freedom from fire risk. These three facts alone should convince the dealer that it is more economical to handle hydrated lime.

Uses of Hydrated Lime.—In general it may be stated that hydrated lime is suitable for any use in the building trade to which lump lime can be put, and it would appear that as soon as the material comes into general use, its advantages will be found to far outweigh any disadvantages. The use of hydrated lime does away with the necessity of slaking lime to a paste, thus saving the space required for the slaking bed as well as the labour of slaking. By the use of hydrate it is possible to proportion the mortar so as to have exact quantities present, since this form of lime comes into the market in convenient packages of known weight. This point is always appreciated by the architect and engineer, as it is a well-known fact when lump lime is used as much sand as possible is added, with the result that the mortar is lean and possesses little strength. If hydrated lime is correctly manufactured and the particles of core removed by some process of separation, the resulting product will possess a higher grade of purity than the original lime from which it is made. The product will also be more uniform, and these two facts appeal strongly to all users of lime.

Mortar Made from Hydrate is Stronger than that Made from Slaked Lime.—In June, 1910, the writer presented the results obtained from an extended series of tests on mortars made from both hydrated lime and lump lime to the American Society for Testing Materials. One of the most important conclusions drawn from these investigations was that the mortar produced from hydrated lime was stronger than that produced from the corresponding lump lime slaked to a paste. This conclusion was to be expected, since it is possible to manufacture hydrated

lime by mechanical means under good chemical control which is more thoroughly slaked than it is possible to slake lump lime on the job. With lump lime the user is always dependent upon the thoroughness of slaking, and it is well known that unless lime paste is run off and stored for some considerable time there is no assurance of complete and thorough slaking.

Practically all those who have investigated the strength of lime mortars have recommended the use of hydrated lime in place of lump lime. In Bulletin No. 30 of the U.S. Bureau of Standards the following statement is made:—"The proportion of impurities in hydrated lime is generally less than in the lime from which it is made. In building operations hydrated lime may be used for any purpose in place of lump lime, with precisely similar results. The consumer must pay the freight on a large amount of water, but the time and labour required for the slaking are eliminated and there is no danger of spoiling it either by burning or incomplete slaking. For all building purposes hydrated lime is to be preferred to lump lime. By its use the time and labour involved in slaking may be saved and the experience of the labourer is eliminated as a factor in the problem."

If the use of hydrated lime in the building trade is to be increased, this can be brought about only by the manufacturers of hydrate preparing and marketing only such material as is sound and contains no free lime. There is an increasing demand for hydrate for use in concrete to render the material more plastic and dense. Hydrated lime can be advantageously used in all cement plaster and stucco to make them work smoothly and give a more pleasing colour. In all these uses the soundness of the hydrate is the paramount requirement. No one would think of using unsound cement—why, then, should they expect to use unsound hydrate?

The market for hydrated lime is present, and a concerted action on the part of the lime manufacturers to exercise the care necessary to make a thoroughly hydrated lime will result in a more extended use of the material. It is to be hoped that the manufacturers will direct their energies along this line.—*Concrete-Cement Age.*

THE DOMINION OBSERVATORY, LITTLE SAANICH MOUNTAIN, VICTORIA, B.C.

The building and dome to contain the great 72-inch Canadian reflecting telescope, which is to be located near Victoria, B.C., is to be built entirely of steel, cased inside and out with sheet metal. There is to be a continuous passage between these inside and outside coverings to allow for the circulation of air, the entrance being through openings at the bottom of the building and the exit through louvred openings at the top of the dome. The purpose of this ventilating between the walls is to keep the middle of the dome during the day at the shade temperature, thus preventing the heating of the interior and the disturbance of the form and definition of the mirror by great changes of temperature. The purpose of constructing the building and dome entirely of metal is to allow the whole surrounding of the telescope to rapidly attain the air temperature after sundown. Otherwise, the definition of the star images is seriously affected.

The building is 66 ft. in diameter and nearly 75 ft. high, the centre of motion of the telescope being about 40 ft. above the ground. The dome is revolved by electric motor, and the entire handling of the telescope, whose moving parts weigh 40 tons, is also performed by electricity; seven motors and numerous electric clutches being required for this purpose. The shutter opening is 15 ft. wide, extending 6 ft. beyond the zenith. An electrically operated observing platform, to enable the upper end of the telescope tube to be reached in any position, moves up and down in the shutter opening. Blinds or wind screens are also provided, moving up from the bottom of the opening and down from the top to prevent the shaking of the telescope by the wind.

The accompanying photograph is made from a one-tenth size working model of the

* Chemical Engineer, Portland, Ore.

telescope and observatory, showing even to the smallest detail the form of the structural work and mechanism. This model is entirely of metal, mostly aluminium, and was made by the Warner and Swasey Co., Cleveland, the makers of the mounting for the telescope for the Panama Pacific Exhibition at San Francisco, where it is now on view. This photograph shows more clearly than any photograph that could possibly be obtained of the actual building the correct relative proportions and arrangements of the various parts.

We are indebted to the courtesy of Mr. E. L. Horwood, the Chief Architect of the Public Works Office, Ottawa, for the photograph and the above description.

FIRE PROTECTION OF ST. PAUL'S CATHEDRAL.

All recognise that the efficient protection of St. Paul's Cathedral against fire is a matter of national importance, and it may be recalled that a complete scheme for adequately safeguarding the edifice was carried out about two years ago, the contractors being Messrs. Merryweather and Sons, of Greenwich. So elaborate were the precautions taken that by means of a system of firemain and hydrants, accompanied by special apparatus for forcing water to a great height, it was found possible to throw a jet of water on any part of the vast building from the ground to the summit of the dome.

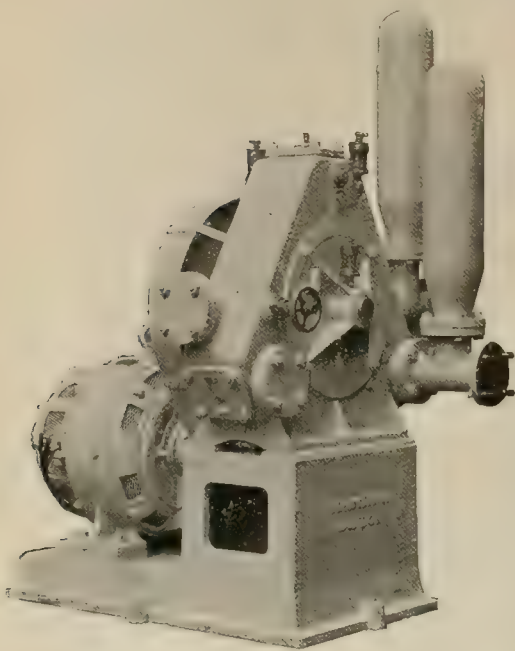
The hydrants fitted at the main roof levels

have hitherto been supplied with water from rainwater collecting tanks on the stone gallery. Experts have decided, however, that these tanks, taking into consideration their enormous weight when filled with water, constitute a danger to the fabric. The fiat accordingly went forth that they should be removed; but this course rendered necessary some alternative means of obtaining a supply of water, under pressure, for the above-mentioned hydrants. Messrs. Merryweather and Sons were consulted, and recommended one of their well known "Hatfield" pumps as best suited to meet the case. Their recommendations were adopted, and the electrically driven "Hatfield" pump shown in the illustration has now been installed at the



THE DOMINION OBSERVATORY, LITTLE SAANICH MOUNTAIN, B.C.—Mr. E. L. HORWOOD, Architect.

Cathedral and fixed at the 60ft. level. It will be observed that the set is very compact, the pump and motor being mounted on the same bedplate. The power is transmitted from the motor to the pump through silent chain gearing, and so smooth-running is this and so quietly does the treble barrel "Hatfield" perform its work that the installation is practically noiseless in operation. The pump takes its water from the Water Board's supply and delivers into the ring main round



the drum of the dome under the colonnade, hydrants being fitted on this main at various points. Each of the hydrants is equipped with hose and fittings, and a special feature of the installation lies in the fact that the pump starts automatically as soon as one of the hydrants is opened, so that a fire can be immediately attacked at the roof level without its being necessary to go near the pump. When the hydrant is closed the electric current is automatically cut off and the pump ceases to work.

WAYGOOD-OTIS, LTD.

EFFECT OF THE WAR.

The fifteenth ordinary general meeting of Waygood-Otis (Ltd.) was held on Monday at the Cannon Street Hotel, Mr. Henry C. Walker (chairman of directors) presiding.

In moving the adoption of the report and accounts, the Chairman said: Heretofore we have been able to consistently pay a dividend on both preference and ordinary shares; this year, however, for the first time we are not able to recommend an ordinary dividend, but I do not suppose that you, any more than your directors, are surprised at the result of the year's trading.

When we met last year the business was still suffering from the considerable stoppage in the building trade owing to the strike which had existed for some months, and we were anticipating that, following the approaching settlement of this, there would be a revival in the building industry which would result in further business for us. The circumstances were entirely changed by the war. In the early days there was a general anticipation that business would be very seriously interfered with, and consequently there was a disposition on the part of everyone to hold up building contracts and other work which was not absolutely and immediately necessary. This inevitably resulted in a considerable check in the number of enquiries for new work, and, with the limited amount of work to be placed, the competition was more severe. The continuance of the war has, of course, somewhat modified the position, as greater confidence has existed during later months in anticipation of a

successful conclusion, but, concurrently with this, there has been a considerable rise in the cost of all materials, and we have had to grant an increase of wages to all our workmen in consequence of the increased cost of living. We encouraged those of our staff and workmen who desired to serve in his Majesty's Forces by undertaking to re-instate them as far as possible at the conclusion of the war, and also to pay their dependents a small allowance during the war. This resulted in no fewer than 300 of our men joining the Forces.

This has involved an expense during the year of £1,991.

We have endeavoured to carry on our office work with as small a staff as possible, but, of course, we have been obliged to take on other men in the works, and, owing to their having less experience than those who have left us, this has naturally added to the expense of manufacture, and, coming at a time when we were organising some of our departments, it further increased our difficulties.

On the declaration of war we offered to place our factories at the disposal of the Government, and during the last few months have been doing an increasing amount of work, and will probably be doing much more in the near future; but this does not come within the period of operations covered by the present balance-sheet. We have secured some important contracts, and I am sure you will feel it a matter of congratulation that we have been able to keep going in face of all the difficulties we have had.

We have been readjusting our methods so as to meet the new condition of things created by the war, and in this connection I should like to pay a tribute to our staff and workmen for the loyal and unselfish manner in which they have supported the efforts of the directors during a very trying period.

The profit on trading, after deducting general expenses, is £12,488. Goodwill and patents stand at £121,835.

This item shows an increase on previous years, being composed of the goodwill and patents of the amalgamated companies, including the escalator rights for Great Britain and the colonies. Freehold and leasehold property and plant, etc., amounts to £109,647; stock and work in progress, £119,682; and sundry debtors, £81,541. This item is about £27,000 higher than previously—accounted for partly by the rearrangement of the accounts and partly by the debts which we took over from the Otis Company; but unfortunately, as another result of the war, it may be necessary to make further provision against bad and doubtful debts by reason of certain accounts we have still outstanding on the Continent. Investments stood at £20,734.

I feel under the circumstances that we have all to be thankful that we have been able to keep as busy as we have, and, so far as the company is concerned, when peace conditions are restored, we may hope for a return of better times. All our departments under the new conditions are working harmoniously together, and we may look forward with confidence to the future. In the meantime your directors will spare no efforts to take you successfully and completely over the present trials and troubles, difficult as they are.

You will be interested to know that economies and improvements have already been effected, and that we are gradually securing the advantages we anticipated as the result of the amalgamation with the Otis Company.

I trust, when I have the pleasure of meeting you again, that the war will be a thing of the past, giving us all an opportunity of resuming our normal business operations.

Mr. C. H. J. Day seconded the adoption of the report, which was carried.

Mr. George Stevenson is retiring from the borough surveyorship of Wenlock, Salop, after thirty-eight years' service. Over 100 candidates have applied for the post.

The Scottish National Housing Co., Ltd., have appointed Messrs. Greig and Fairbairn, 31, York Place, Edinburgh, to act as architects for a first group of 150 houses at Rosyth to be proceeded with immediately.

THE USE OF LARGE STONE CHIPS IN THE MAINTENANCE OF BITUMINOUS ROADS.

The Maryland Highway Commission, of which Henry G. Shirley is chief engineer, after an experience with the maintenance of bituminous roads extending over several years, has (says our American contemporary *Engineering and Contracting*) adopted the practice of using stone chips at least 1 in. in size. The chips are spread over the surface of the road, at seasons of the year when the bitumen is soft, in an even layer one stone thick, and rolled. The rolling forces the stones into the surface of the road until they are flush with the pavement. When completed the surface has somewhat the appearance of a mosaic. Hard blue limestone is used, and has been found to be quite satisfactory for this purpose.

The reason for the method of maintenance adopted is obvious. It has been universally found in practice that small stone chips are either quickly ground to a powder by iron-shod traffic or are in a large measure swept from the road surface by automobile traffic. The use of sand is now quite generally avoided by maintenance engineers, on the ground that it tends to build a mat or pad that becomes unmanageable when thick, and also greatly increases the danger of waves in the pavement due to the pushing of the bituminous surface occasioned by the continual passage of automobiles, usually travelling in a single direction on one side of the road.

While this method of surface maintenance—or, more properly, surface improvement—is not new from an experimental standpoint—similar work having been done by Major Crosby, the former engineer for the commission—its application to road maintenance work on a large scale, such as is in progress in Maryland, is an innovation. From the standpoint of the road user it possesses advantages. The exposed stones roughen the surface and reduce the slipperiness of the pavement. Slipperiness has always been a fault of bituminous treated country roads, especially since many of the horses that travel them are not sharp shod. The danger of automobiles skidding is also reduced. From the standpoint of increasing the life of the road the reduction in slipperiness permits the use of a relatively higher crown, thereby insuring thorough drainage of the surface and increasing the durability of the road, the practice of most road engineers being to use as much crown as limiting conditions will permit. In this connection it may be said that experience has demonstrated in the city of Washington that asphalt streets and roads built with a high crown have usually a longer life than those streets or roads on which less crown is used.

While the labour cost of applying large stone chips in this manner is necessarily increased somewhat, the road surface is improved by the thorough ironing out it is given by the roller. The greater availability of the supply of larger stone is also a factor worthy of consideration in many sections of the country. It is frequently difficult to secure an adequate supply of $\frac{1}{2}$ -inch and $\frac{3}{4}$ -inch stone.

It is believed that the incorporation of large stone chips into the surface of the road is worthy of the consideration of engineers engaged in both maintenance and construction work. While difficulties are encountered and careful workmanship is required, the results obtained are of sufficient value to warrant the additional cost.

A parish church is about to be built at Cults, N.B., from plans by Messrs. Marshall Mackenzie and Son, of Union Street, Aberdeen. The estimated cost is £4,500, and 400 sittings will be provided.

Oswestry Town Council has decided to oppose a scheme proposed by the Salop County Council for the erection, at a cost of £20,000, of an isolation hospital to serve eight urban and rural districts in north-west Shropshire.

The Southern California Chapter of the American Institute of Architects has endorsed pending legislation in that State for the appointment of city planning commissions in all unchartered cities of California and creating the office of State Architect with purely advisory powers.

Currente Calamo.

A special exhibition in aid of the Artists' General Benevolent Institution is open at the Royal Society of Painters in Water Colours, comprising 156 subjects. Among the more noticeable exhibits are four good seascapes (6, 7, 8, and 9) by Mr. C. Napier Hemy, R.A. Of the four sent by Mr. Albert Goodwin we like "Beachy Head" (11) best. Mr. R. Thorne-Waite has a fine view of "Wensleydale" (14), and three more. Two of the four sent by Mr. Arthur Rackham are Peter Pan pictures (19 and 20), illustrating his adventures in Kensington Gardens. Mr. Reginald Barrett contributes four excellent architectural subjects, "The Bronze Candlestick, St. Mark's, Venice" (23), "The Church of the Gesuati, Zattere, Venice" (24), "Entrance to the Fortress of Gwalior, India" (26), and the "Courtyard of the Alhambra" (27). Mr. George Clausen, R.A., sends "Riverside Wharves" (28), and three more. Mr. S. J. Lamorna Birch has four, "June in Cornwall" (47) being, perhaps, the most attractive. "Richmond, Yorks, from the Terrace" (48), is the best of Mr. Robert Little's four, but the three Italian scenes are good. Sir Ernest Waterlow, R.A., sends a fine view of "Bideford on the Torridge" (89), and four others. Mr. Alfred Parsons, R.A., the president, is best represented by "The Memorial Stone" (96). Of Mr. Henry S. Tuke's four we like best his "French Barque Ashore at St. Mawes" (128).

The June issue of the *Architectural Association Journal* is a number of much interest. It opens with a portrait and short biography of the new President, Mr. H. Austen Hall, and photographs of the plan and model at the Academy of his *magnum opus* (for the present), the Central Offices for the Metropolitan Water Board in Rosebery Avenue. We are pleased to see that £1,052 5s. 6d. has been contributed in response to the special appeal for funds to meet the financial difficulties of the Association occasioned by the war, and in addition between forty and fifty members have promised increased annual subscriptions for the next two or three years. Though the membership of the A.A. School has naturally been seriously depleted, it is satisfactory to learn that several first-year members have joined, while the number of second-year students remains stationary. The list of prizes to be awarded at the end of the session has been revised—and reduced. The list of A.A. members serving in the forces now comprises 361 names. The roll of honour in the current issue records the deaths of 2nd Lieutenant G. C. C. Ferrier, Royal Fusiliers, and Lance-Corporal H. D. Ainsworth, 5th Middlesex Regiment, and states that the following members have been wounded:—Private W. F. Edge, Hon. Artillery Company; Lieutenant H. W. Hadwen, 3rd Duke of Wellington (gas poisoning); Captain L. F. Jones, 12th Battalion London Regiment (the Rangers); 2nd Lieutenant T. A. Lodge, 24th London Regiment (Queen's); Rifleman C. McLachlan, 12th Battalion London Regiment (the Rangers); 2nd Lieutenant Hon. A. P. Methuen, 1st Scots Guards; Captain A. H. Moberley, 21st London Regiment (1st Surrey Rifles); and 2nd Lieutenant J. R. Truelove, 12th London Regiment (the Rangers). The Editor of the *Journal* states that Mr. Alan Potter, "who has been doing such noble work at the A.A. since the war broke out in connection with the War Service Bureau, has for family reasons been compelled to resign from the Hon. Secretaryship of the Bureau, after

having been responsible for sending about 700 men to the various branches of the Army. Mr. Yerbury has now undertaken this work, and members requiring advice or assistance in connection with enlistment should communicate direct with him. We understand that over fifty men joined the Royal Engineers and Sanitary Corps through the Bureau during last month."

The forced realisation of much real estate and personal property in every belligerent country is certain, and it is not improbable that many articles of virtue and objects of art may not only have to be disposed of at quite nominal prices, but that they may be lost to their country of ownership. In France special steps are being taken to obviate this danger by the imposition of an *ad valorem* duty upon the exports of such articles. A Bill has been introduced into the Chamber with the object of submitting for a period of five years all articles possessing any artistic or historic interest to a tax on exportation on the following scale, namely:—5 per cent. on a valuation up to £200, 10 per cent. between £200 and £800, and 15 per cent. on articles valued at more than £800. In the case of articles possessing a national interest, it is proposed to empower the Government to prohibit their export for a period of five years, and to give the Government during that period an option of pre-emption for account of the State. The law is not to apply to the works of living artists or of those who have died within the last twenty-five years. A similar measure here would be opportune.

An architect figures as the chief character in the Russian dramatist Leonidas Andreiev's play, "The Life of Man," which has been produced at the Lyceum Theatre, Edinburgh, for the first time outside Russia. It is not a cheerful play. Briefly, the dramatist endeavours to recount the life of a man from cradle to grave in an atmosphere highly charged with symbolism and thickly populated with mysterious Hims and Its. Before the man is born, Life speaks his prologue. During the process a group of old women mow and chatter and cynically chronicle the travail of the mother. As the child is born a candle is lit—in due course to be snuffed—in the hand of Life. The Man's life follows thereafter in four stages. In the first he is living on love and dreams with a charming wife, while he fails to "arrive" as an architect. This love-making is described as quite the best thing in the play, for its beauty is heightened by the brave challenge of Poverty and Destiny which breathes through the young people's talk. In the next stage the Man has "arrived." But his success and the cringing suitors who chase love from his home are rather sketchily drawn. Andreiev is happier in showing the return to poverty, through a change in the popular taste in architecture. Henceforth he piles up calamity with characteristic ardour. The Man's only child dies, and he himself becomes a dipsomaniac. The last stage shows his end in a delirious death-bed.

Sir Christopher Wren married twice, and the following love-letter was written to Faith Coghill, who became his first wife on December 7, 1669. The lady had dropped her watch in the river or the sea, and had handed it to Wren, who, in returning it repaired, expresses himself as follows:—"Madam,—The artificer having never before mett with a drowned Watch, like an ignorant physician has been soe long about the cure that he hath made me very unquiet that your commands should be soe long deferred; however, I have sent

the watch at last and envie the felicity of it, that it should be soe neer your side, and soe often enjoy your Eye, and be consulted by you how your Time shall passe while you employ your hand in your excellent workes. But have a care of it, for I put such a Spell into it that every Beating of the Ballance will tell you 'tis the pulse of my Heart which labours as much to serve you and more Trewly than the watch; for the watch I believe will sometimes lie, and sometimes perhaps be idle and unwilling to goe, having received so much injury by being drenched in that briny bath, that I dispair it should ever be a Trew Servant to you more. But as for me (unless you drown me too in my Teares) you may be confident I shall never cease to be, Your most affectionate, humble servant, CHR. WREN."

We had occasion a few weeks ago to draw attention to the application of slag wool for rendering roofs fireproof and bomb-resisting. Messrs. F. McNeill and Co., Ltd., of Bunhill Row, E.C., are specialising in this direction, and their advertisement, which appears on another page, is interesting, inasmuch as each week's issue gives different illustrations of enemy aircraft, with which, bearing in mind their now oft-repeated visits, it is as well to make oneself familiar. In the set of advertisements that we have before us at the time of writing we notice three varieties of airship—the Zeppelin, the Schulte-Lanz, and the Parseval, whilst there are no less than five types of aeroplane—the Stahltaube and Rumplertaube monoplanes, and the Aviatik, the D.W.F., and the Albatross, which are biplanes.

A paper read last Friday on the effect of springs upon water levels in East Surrey by Mr. Henry Dewey is a useful contribution to the solution of an old problem. Mr. Dewey has investigated an area of some thirty square miles situated in North-East Surrey, between Epsom and Croydon, most of it chalk, but a narrow strip along the northern edge is formed by the sands, loam and clays of the tertiary beds, and some plateaus and isolated hills on the east are capped with thick masses of pebbles. The area is separated into two districts by a deep narrow valley in which the town of Croydon has in great part been built. These two contiguous areas differ markedly from each other in the movements of their subterranean waters. The rise and fall of the underground water in the eastern district is about four times as great as that in the western district, and Mr. Dewey concludes that the underground waters follow defined channels rather than flow through the interstices of the mass of chalk. What more concerns water engineers is the fluctuation in the water level in the district generally, and the fact that the tendency is for the average level to sink. Many observers have endeavoured to explain the shrinkage, and some have ascribed it to the enormous pumping from the chalk area round London. Mr. Whitaker, the geologist, however, says that the effect of pumping in the chalk is not so great as is usually imagined, and that it is not reasonable to expect always to maintain the level of the underground water at a high figure. The level may tend, over a number of years, to sink, but nature will see to it that there is always sufficient.

We hasten to apologise to our contemporary the *Architect* for a mis-statement on this page last week. We said, and thought so, that we alone had published illustrations of Mr. Darling's works. But the *Architect* also gave some of them in its issue of January 6, 1911,

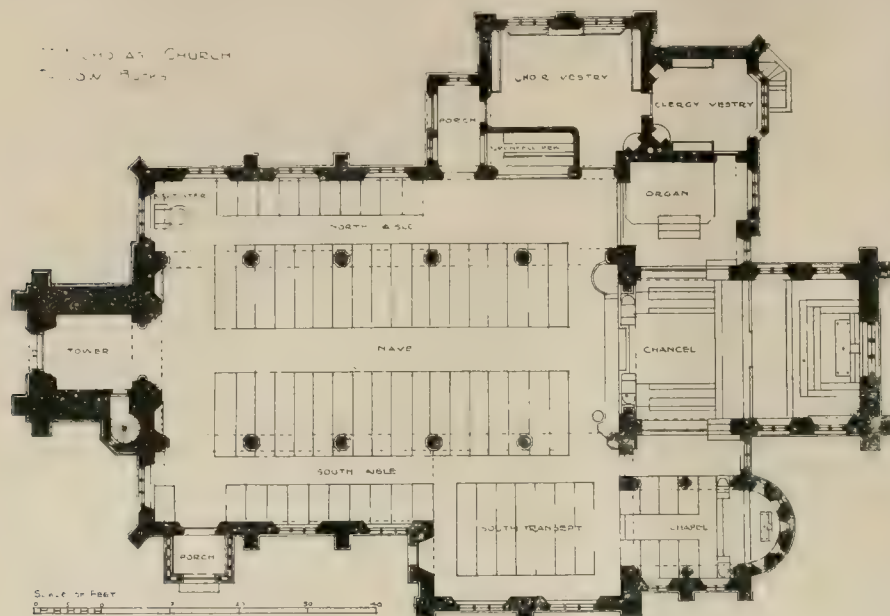
including the Canadian Bank of Commerce, which we did not give till December 12, 1913.

In our notice last week on this page of Professor Wilfrid J. Lineham's new book on "Hand Lettering," his name was incorrectly given as William J. Lineman.

Our Illustrations.

ST. NICHOLAS' CHURCH, TAPLOW.

The illustration shows the interior view of this church looking east, as re-built from the designs of Mr. Geo. H. Fellowes Prynne,



ST. NICHOLAS' CHURCH, TAPLOW.

MR. GEO. H. FELLOWES PRYNNE, F.R.I.B.A., Architect.

F.R.I.B.A., of Westminster. The work of rebuilding the church was undertaken by Messrs. Honour and Sons, of Tring, and included the entire re-erection of the main body of the church, the lengthening of the chancel, and the retention of the old walls of the original tower. Though the design is retained, the tower has been so much improved by casing with Kentish ragstone and freestone dressing that it is not recognisable as being that of the old square structure. The tower is capped with a copper spire rising to a height of 116 ft. The main western entrance is under the tower, and a porch with half-timbered construction has been placed at the south-west end of the south aisle.

The nave is divided into five bays, and is 67 ft. in length, by 24 ft. 6 in. in width, with a height of about 40 ft. to the apex of the roof, which is of openwork construction in oak. The aisles on each side of the church are 10 ft. wide, and a double southern transept forms, as it were, the nave of a side chapel. Vestries and an organ chamber are thrown out on the northern side.

The chancel extension is at the eastern end, and arches have been constructed on both sides, but to allow of a view of the altar being obtained from the nave and aisles. The chancel is paved with marble flooring, and the walls faced internally and externally with Kentish ragstone. Between the nave and the chancel a stone traceried screen rises to the whole height of the arch. The building is lighted by electricity, this work being carried out by Messrs. E. P. Allam and Co., of London, and heated by the low pressure system of hot water, the installation being fitted by Messrs. C. P. Kinnell and Co., of London.

THE ENGINEERING LABORATORY, OXFORD.

The site for this building is the acute angle where the Parks Road meets the Banbury Road, and it is to some extent controlled by a building line and adjoining buildings. As the funds available did not admit of building more than a part of what it was considered would ultimately be required, it was, from the nature of the site, more than usually important to consider the whole scheme, and to provide in the buildings which have now been built for the future extension. The plans illustrated show the parts already built in black, and the proposed future extension with shaded walls. The ultimate scheme includes four large rooms, each 52 ft. by 25 ft., with good-sized bays. Two of these at the south end are devoted to

are seven rooms available for research, stores, etc., the precise use of which will no doubt be further considered when the building comes to be completed.

A glass-covered area will probably be used as a workshop and for motor bicycles. It connects with a room intended for bicycles. In the existing building the thermo-dynamics room has had to accommodate the electrical machinery, and electrical instruments are placed in the future class-room together with a portion partitioned off the drawing office, the bay of which also serves for the instrument maker. The professor takes the room marked assistant.

The cost of the portion of the building which was completed last Christmas is about £5,800. The building is of red brick with Clipsham stone dressings, and a red-tiled roof. The building contractors are Messrs. Wooldridge and Simpson, of Oxford. Concrete floors by the Seigwart Fireproof Floor Company were used owing to the fact that the beams are manufactured at the works, and have only to be grouted together on arrival at site. Further points considered were the fact that owing to the floor being hollow throughout it is light and soundproof, and forms a perfect insulation against heat and cold. Heating engineers, Messrs. Womersley, Smith, Gray and Co. Clerk of the works, Mr. Joseph Rees. The architect is Mr. Wm. C. Marshall, M.A., of Hindhead, Surrey.

SELECTED DESIGN: STEPNEY MUNICIPAL BUILDINGS.

The description of this double-plate will be found in our review of the competition, which appears on our first page this week.

TREWINNARD COURT BOARDING HOUSE: TRURO CATHEDRAL SCHOOL.

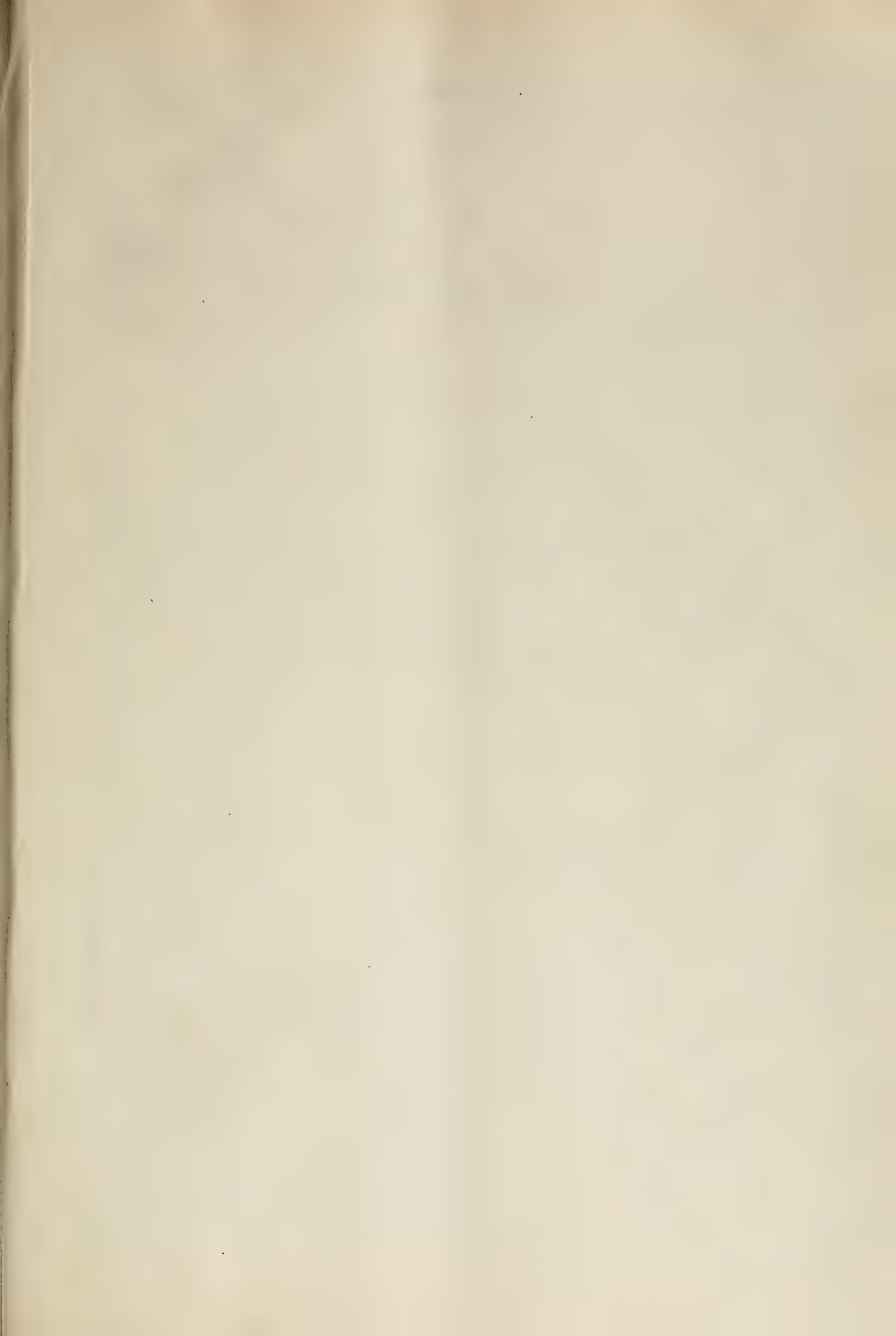
This house, of which we give a view and plan, has been recently built from the design, and under the superintendence of Mr. Frank L. Pearson, F.R.I.B.A., architect to the Dean and Chapter, and is planned to accommodate thirty-eight boarders. The building occupies a fine position on high ground, with the main front facing south-east, overlooking the town, and affording a splendid view of the Cathedral. As will be seen from the plan, the headmaster's section of the house is at one end, separate from the part occupied by the boys. For the latter, a large study room is provided, a library, and a dining room near the kitchen, with the usual offices on the ground floor and two large

electrical machinery and instruments, and are connected by an underground channel with a battery room in the basement. The other two are allotted to a drawing office on the first floor, and to thermo-dynamics on the ground floor, the latter opening into a considerable boilerhouse and also connecting with



large boilerhouse and also connecting with a large room and hydrant room. These ground-floor rooms have an accessible space under the floors used for various pipes and connections. A lecture-room, class-room, and library complete the part of the building allotted to the ordinary educational course. Besides the above all the rooms provided for the professor, assistant and porter, there

are dormitories on the first floor. The latter are specially well lighted and ventilated, having windows on both sides. There is a separate sanitary block disconnected from the main building. The elevations are of stone of the simple form of Renaissance architecture which is found in a number of Cornish houses of the eighteenth century.



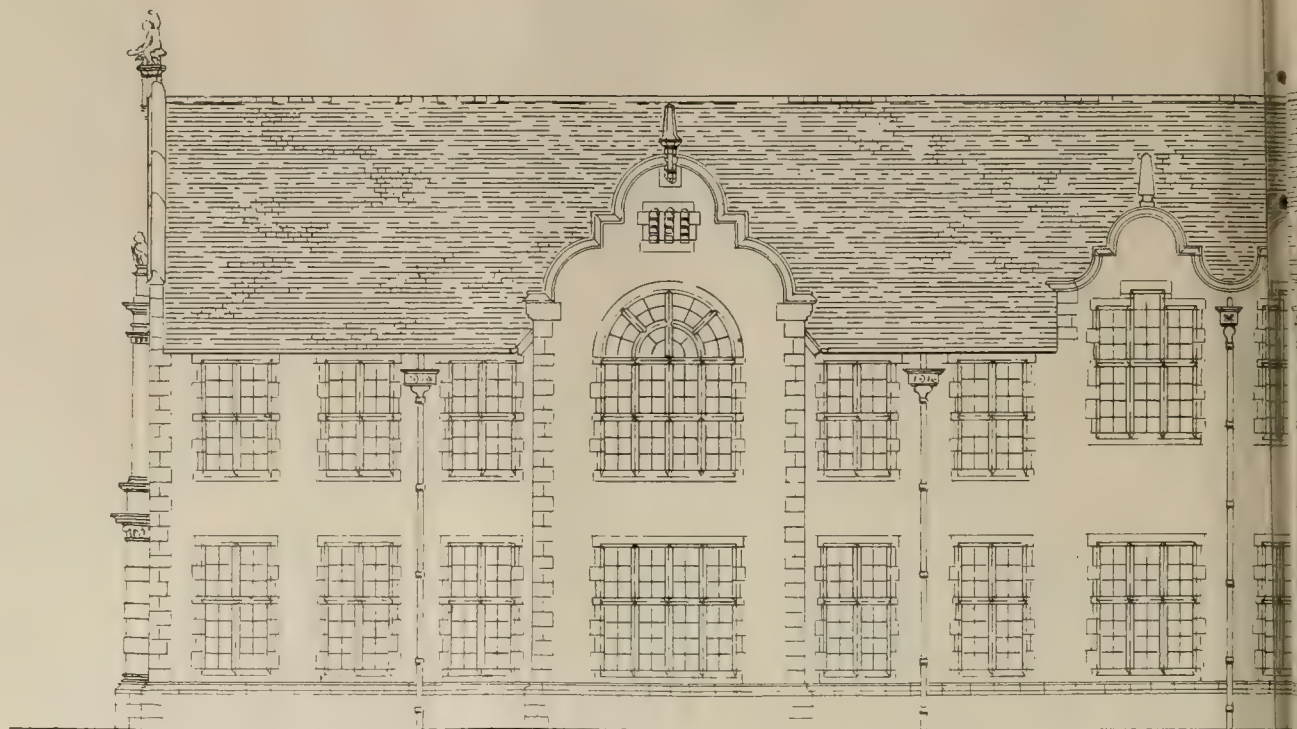


TREWINNARD COURT
BOARDING HOUSE TRURO CATHEDRAL SCHOOL
FRANK L. PEARSON, ARCHT.

TREWINNARD COURT, BOARDING HOUSE, TRURO CATHEDRAL SCHOOL.
Mr. FRANK L. PEARSON, F.R.I.B.A., Architect.

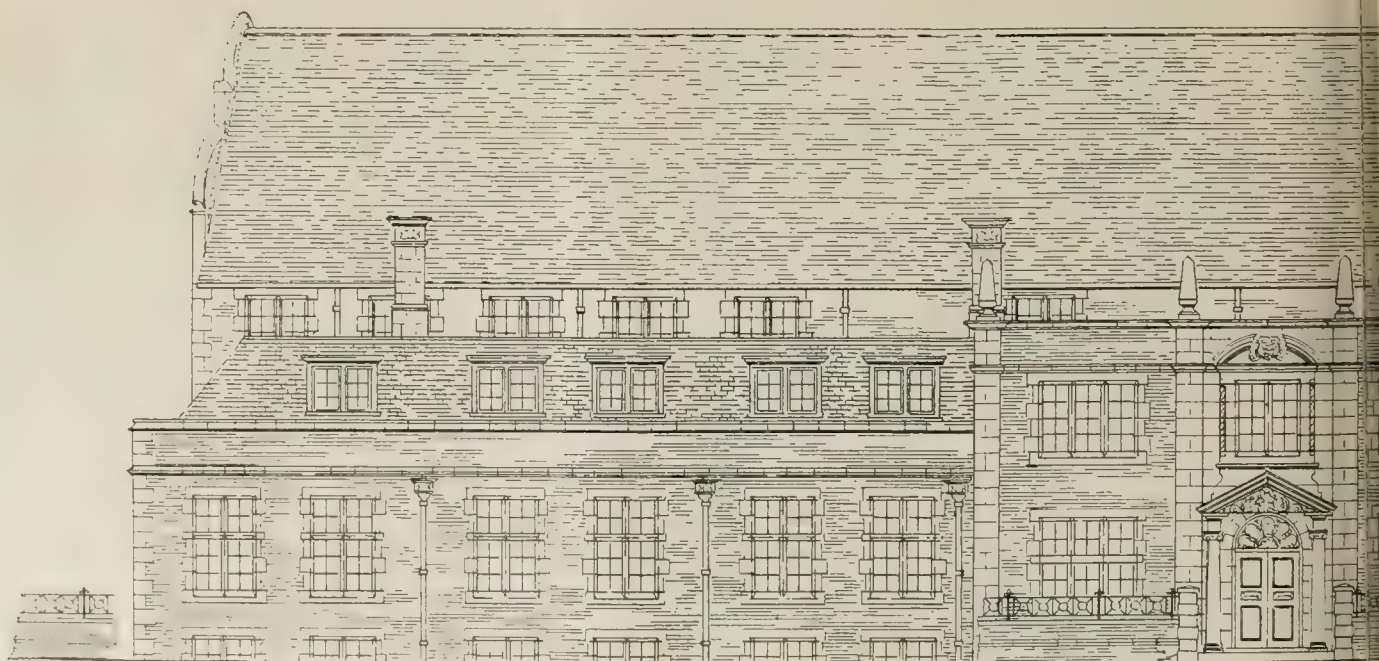


Engineering



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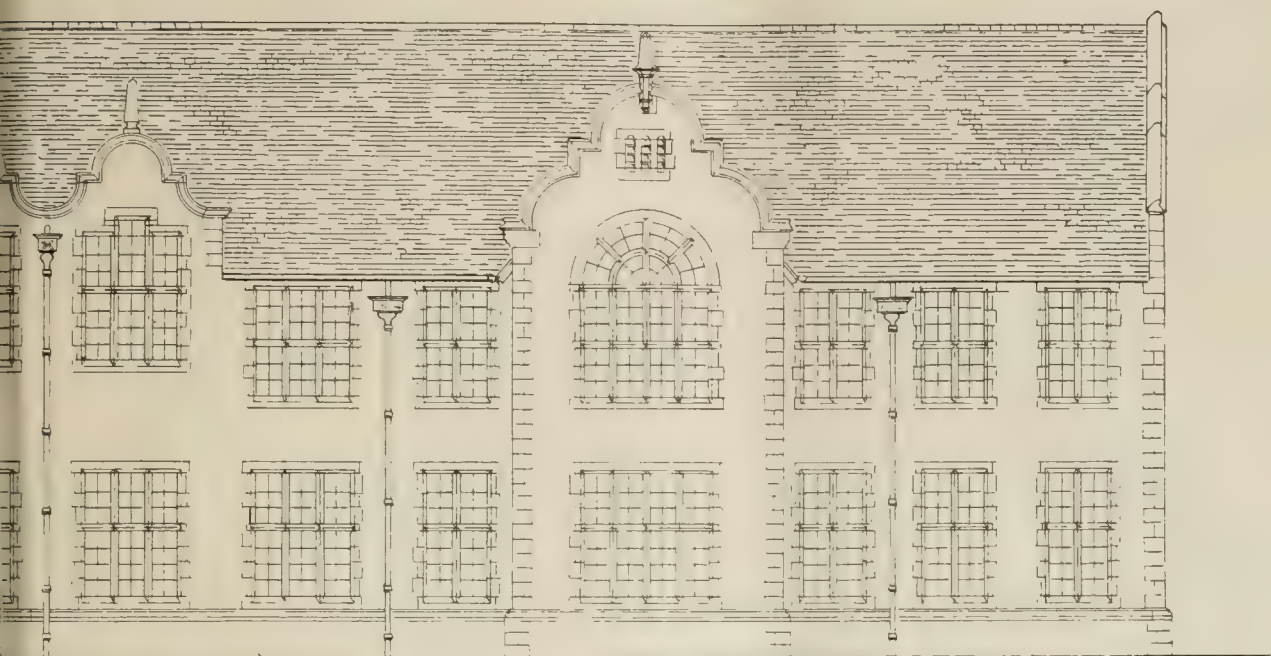


East E

← Proposed Addition →

JUNE 30, 1915.

oratory - Oxford



ards Banbury Road



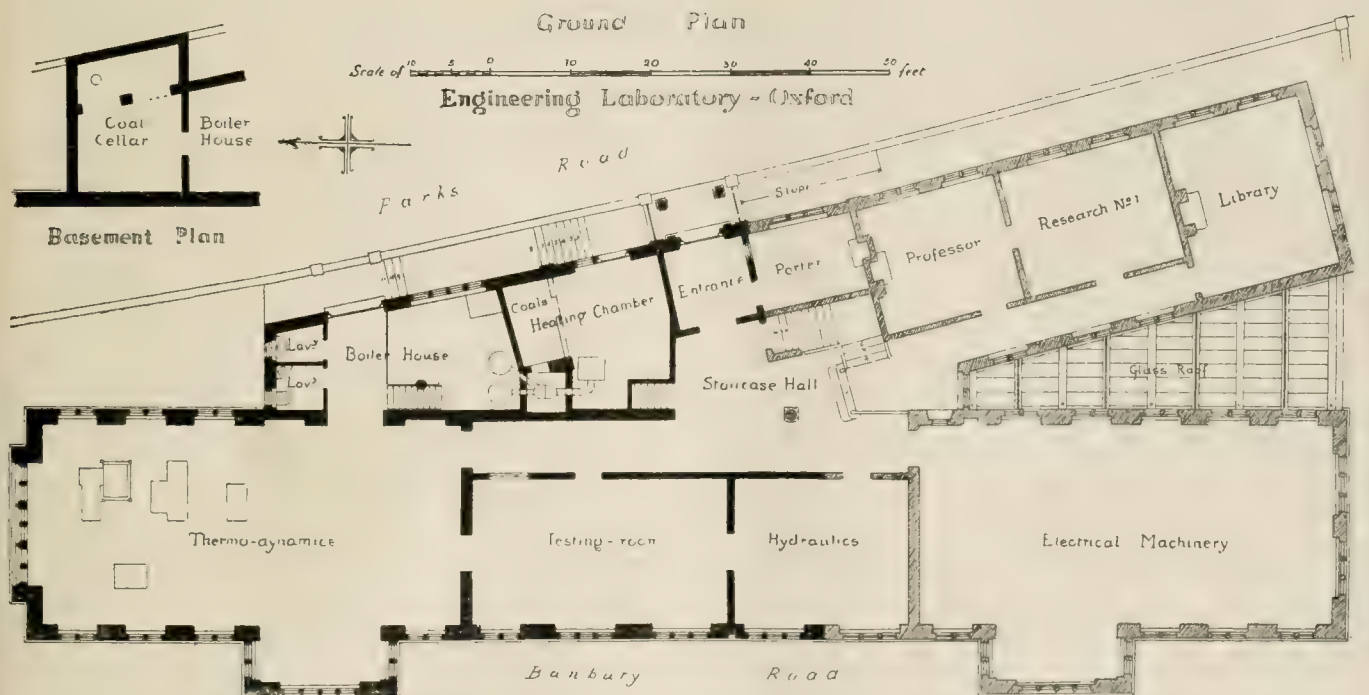
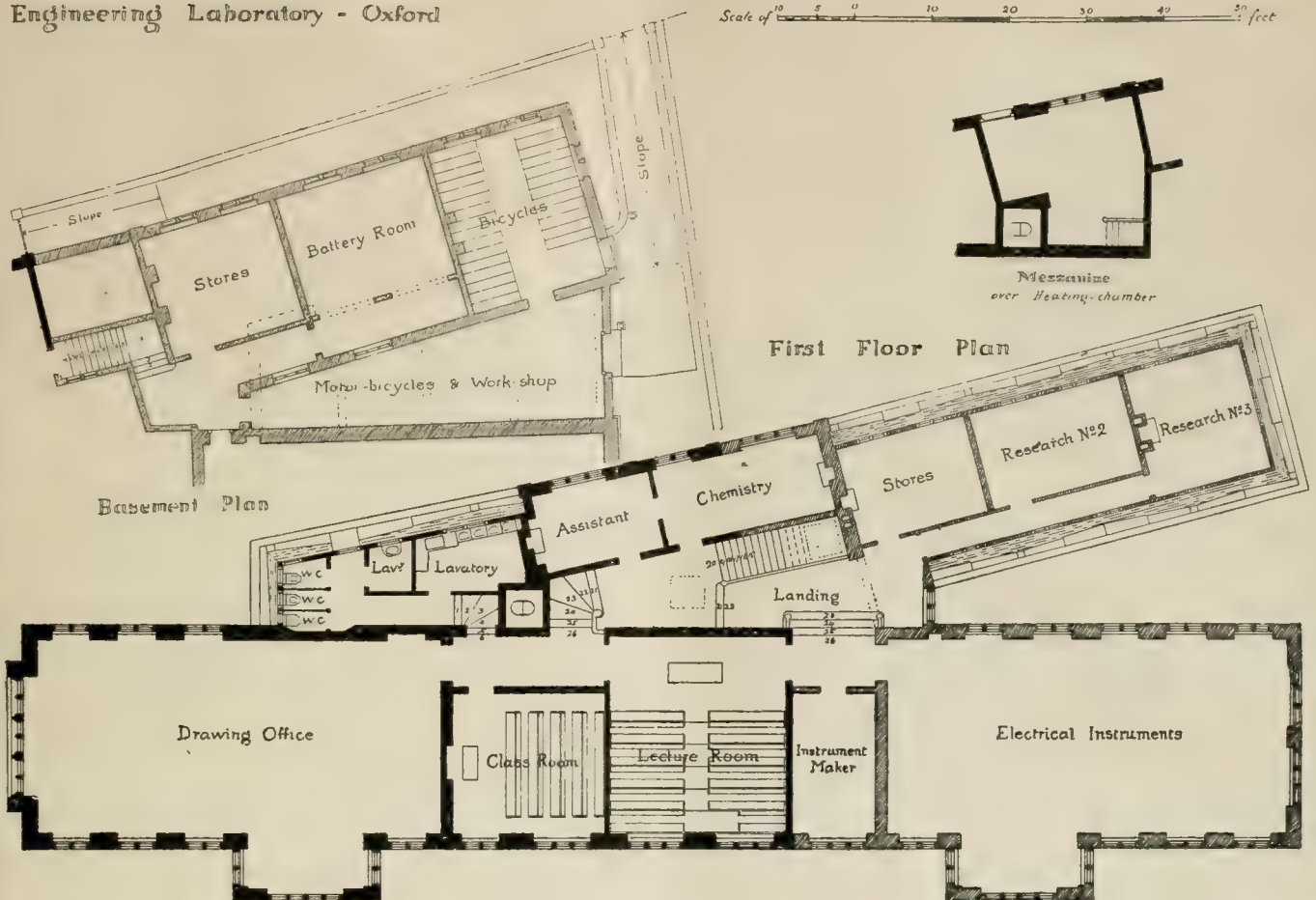
levation towards Parks Road.

Already Built

RY ROAD AND PARKS ROAD, OXFORD.

41 M.A., Architect.

Engineering Laboratory - Oxford



THE ENGINEERING LABORATORY, BANBURY ROAD, OXFORD.
Mr. WM. C. MARSHALL, M.A., Architect.



SELECTED DESIGN STEPNEY MUNICIPAL BUILDINGS, ARBOUR SQUARE, 10

S, JUNE 30, 1915.



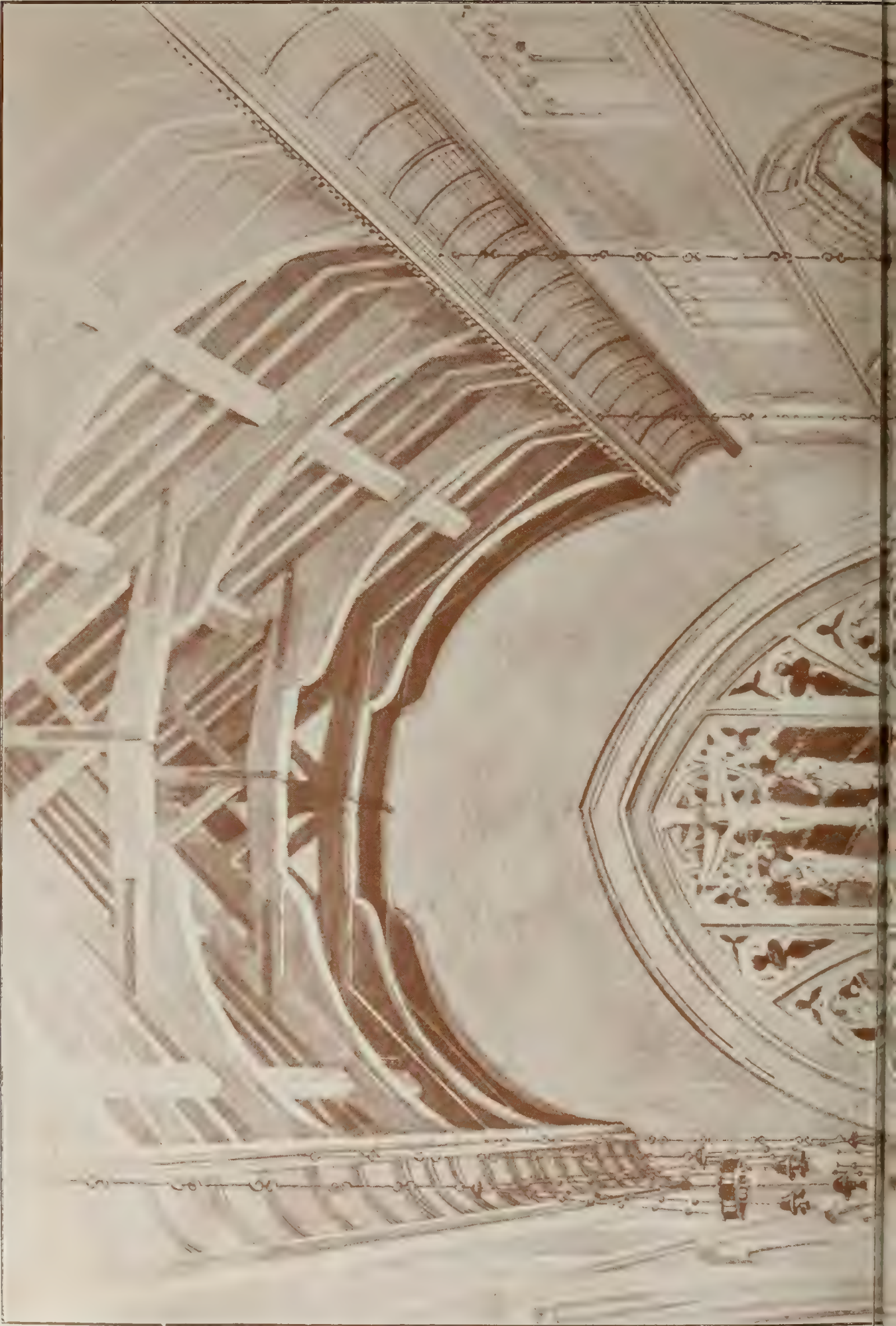
Floor Plan



Floor Plan



THE BUILDING NEWS, JUNE 30, 1915.





G. H. FELLOWES · PRYNNE
ARCHITECT

CHURCH OF ST. NICHOLAS, TAPLOW. INTERIOR, LOOKING EAST.
Mr. Colonel H. FELLOWES PRYNNE, F.R.I.B.A., Architect.

A PLEA FOR SMALLER CITIES.

Concluding an able paper recently read before the Engineers' Club of Philadelphia on the fundamental elements of the make-up of the modern city, Mr. S. M. Swaab, its thirty-seventh president, said:—

Why cities vie with each other in matters of population or area with a view to securing the biggest is inconceivable. From certain points of view the financial problem involved and certain sociological problems may be easier of accomplishment, but many of the topics alluded to in this paper only become problems of serious concern when the population becomes considerable and when the area of the city is increased unduly.

For instance, in a city of, say, 200,000 inhabitants there is not, nor can there be, a transit problem, as a place which is used as the habitat of a fifth of a million of persons is scarcely big enough to require rapid transit. With the increase in population beyond a certain limit, however, an increase in area is required, and as the population moves away from the old residence section to the suburbs, which is usual, some means of transit must be provided between the business section and the new residence section, and with each material addition to population and consequent increase in size the people move further away, eventually requiring that high-speed lines be introduced.

Nor are the water and sewerage problems and the housing problem and the water purification and sewage disposal problems generally of serious concern until the municipality has attained a certain size, as all of these problems are more easily solved and all of these facilities more easily provided for a small community than for a correspondingly large one, and, in the case of large cities, additional problems come up from time to time which were not a part of the original scheme, and which become extremely difficult to correlate with the whole.

The dictum of the biologists can here be reasonably applied (as the city has been compared with the human organism) that an organism is not necessarily higher in the scale of being if it is simply larger or more complex. The former can exist under much more simple conditions, and may therefore be compared in fitness with a more complex organism which requires more complex conditions under which to survive and thrive.

The small city with its simple problems can therefore well compare with the larger city in which every one of its physical problems is more involved and more complex.

Mr. Sidney H. Morgan, surveyor to the Prestwich Urban District Council, has been gazetted second lieutenant in the East Lancashire Royal Engineers.

The London County Council (Tramways and Improvements) Bill, which has already passed through all stages in the House of Commons was given a second reading in the House of Lords on Thursday night.

The streets and plans committee of the corporation of Middlesbrough have approved generally the alternative scheme of the borough engineer, Mr. S. E. Burgess, for laying out the Saltwells estate, and have appointed a committee to confer with the landowners on the subject.

Mr. John Robinson, surveyor to the Darlington Rural District Council, who is retiring, after nineteen years' service, in order to carry on his own business, has been presented by the councillors and official staff with a silver tea service and silver-mounted tea-tray. From the workmen Mr. Robinson has received the gift of a gold Albert and medallion.

Lord Devonport, the chairman of the Port of London Authority, laid on Wednesday the foundation-stone of the Authority's new offices in Trinity Square, the contract for which was let to Messrs. John Mowlem and Co., Limited, of Pimlico, some months ago. The ceremony was an informal one, only the members and principal officers of the Authority and the architect, Mr. Edwin Cooper, F.R.I.B.A., being present. We illustrated Mr. Cooper's design when selected in competition by the assessor, Sir Aston Webb, R.A., in our issues of July 12 and 19, 1912. The style is Late Renaissance, and the leading feature is a square tower of two stories set over the central main façade, which has a Corinthian colonnade on a rusticated base.

Building Intelligence.

BRISTOL.—The extensive accommodation which the Southmead Infirmary has afforded for wounded soldiers has been increased by the building of extra sets of wards, which have just come into use. These blocks of buildings, though intended for temporary use only—as long as the war lasts and our wounded soldiers require nursing—are of a fairly substantial character, having walls of bricks. A one-ward block containing eighty beds was erected in five weeks, and a block with two wards, each with eighty beds, in eight weeks. There has thus been provided in a short space of time the additional accommodation of 240 beds. Mr. W. S. Skinner, F.R.I.B.A., Orchard Street, Bristol, the architect of the Infirmary, also prepared the plans of the temporary buildings, and Mr. F. Chown, Bristol, was the contractor.

NEWCASTLE-ON-TYNE.—The Young Women's Christian Association premises in Saville Row are being remodelled and extended from plans by Mr. Arthur B. Plummer, F.R.I.B.A., of Newcastle. The extension to the west will have an open stone porch, with inner vestibule. From this there is a side entrance to a new lounge 36 ft. by 20 ft., and also to a corridor leading to the hall 56 ft. by 29 ft. 6 in. in the rear. In connection with this corridor there is to be a supper room 20 ft. by 14 ft., and a dining room 20 ft. by 18 ft. A small kitchen 12 ft. by 9 ft. 6 in. will be provided with a serving hatch. More important meals will be supplied from the new kitchen 21 ft. 6 in. by 15 ft., and a scullery 18 ft. by 12 ft., to be built at the rear of the present restaurant. Larders, stores, housemaid's pantry, and lavatories, etc., and locker store, and gentlemen's lavatory are to be provided on the ground floor, also bathroom for the use of non-resident members of the Association. In addition to the present first-floor rooms, four new rooms (for secretaries and classrooms) are to be built. The tender of Mr. Stanley Miller, of Newcastle, being the lowest, has been accepted for the works.

WATER SUPPLY AND SANITARY MATTERS.

LIME PURIFICATION OF WATER.—The report of the Director of Water Examination on Research Work, presented to the Metropolitan Water Board, states without hesitation that river water, no matter how impure, may be brought into a condition of absolute safety bacteriologically and of great relative purity chemically by means of lime added in the proportion of less than 1 lb. to 500 gallons of raw Thames water. The Water Examination Committee were of the opinion that the practicability of the process on a large scale is deserving of further investigation. The committee reported that while there can be no question that the world-wide war now raging increases very appreciably the risks of epidemic water-borne disease, the director has shown that his methods can detect the presence of cholera vibrios.

STALYBRIDGE.—Mr. A. G. Drury, an inspector under the Local Government Board, has held an inquiry at Stalybridge into an application by the Stalybridge and Dukinfield Joint Sewerage Board for leave to borrow £28,539 for sewerage and sewage disposal. It was stated that since the inception of the scheme in 1894 the total amount of loans sanctioned was £99,892. The amount of the present application, in the first place, was with respect to an excessive expenditure on the 1903 sanction of £13,564—namely, £2,204. The second item was expenditure on the 1911-12 sanction, amounting to £12,018 and £791, giving a total for these two of £13,510, less £5,000 provisionally sanctioned in October of last year, leaving a balance of £8,510. There was also an application in respect of new and additional works, amounting to £17,825, giving the total amount asked for—£28,539. This money was necessary to meet the requirements of the Mersey and Irwell Joint Committee by completing works now in progress. At the last meeting of the board a resolution was passed to the effect that, failing any further sanction by the Local Government Board, the expenditure on the extensions should cease at the earliest time possible. Mr. C. J. Lomax, engineer, explained the plans, and said he wished to impress upon the inspector that, whatever was granted, it was necessary that they should have money for the storm water tanks.

COMPETITIONS.

BRADFORD TOWN PLANNING.—The premiated designs in the recent competition for the replanning of streets in the central area of Bradford will be exhibited in the galleries of the Royal Institute of British Architects, 9, Conduit Street, W., commencing on Monday next, July 5, between the hours of 10 and 6. Admission free.

STEPNEY.—In this competition for the new municipal buildings at Stepney, which we review elsewhere this week, the design selected is by Messrs. Briggs, Wolstenholme and Thornely, F.F.R.I.B.A., of 612, Royal Liver Buildings, Liverpool. The £100 premium is awarded to Mr. W. Frazer Granger, Canterbury Road, Brixton, S.W.; the £75 premium to Messrs. Ambrose Poynter and G. H. Wenyon, South Molton Street, W.; and the £50 premium to Messrs. T. Darbyshire and E. A. Collard, of Tooting. We illustrate the selected design to-day, and shall give the first two premiated designs next week.

OBITUARY.

The death has taken place of Mr. Robert Phillips at 9, Belgrave Road, Gloucester, at the age of 77 years. The deceased was formerly county surveyor of Gloucestershire, was an associate member of the Institute of Civil Engineers, a member of the Royal Sanitary Institute, a member of the Municipal and County Engineers' Association, and a past president of the County Surveyors' Society. Previous to his appointment by the Gloucestershire Court of Quarter Session, he had for many years been in charge of works in London and the North of England for the London School Board and H.M. Office of Works. Mr. Phillips held the appointment of county surveyor for thirty-one years, and upon his retirement, in June, 1907, the county council retained his services as consulting surveyor. Shortly after his appointment as county surveyor he carried out very extensive work to the Shire Hall and Asylum at Gloucester, and other county buildings. He leaves one son, Mr. Robert S. Phillips, architect to the County Education Committee, and three daughters, one of whom is the wife of Mr. W. J. Bache, the borough electrical engineer of Cheltenham.

Lieutenant John Nixon Horsfield, A.R.I.B.A., F.S.I., of Arden, Portsmouth Avenue, Thames Ditton, whose death from wounds received in action at the Dardanelles has been reported, was a son of the late Mr. J. Nixon Horsfield, formerly surveyor to the Hampton Wick Urban District Council. He was educated at the City of London School, and twice represented at Henley the Kingston Rowing Club, of which he was a life member. Mr. Horsfield became a student of the Royal Institute of British Architects in 1903, and four years later passed the examination for the Associateship. He had been a fellow of the Surveyors' Institution since May, 1909. He was only thirty-two years of age, and leaves a widow.

Mr. Edward Delano Lindsey, widely known as an architect and a lecturer on fine and applied arts, died on April 30 of paralysis, at his home, 175, Amity Street, Flushing, Long Island, N.Y. He was born in New Bedford, Mass., graduated from Harvard in 1856, and later studied in l'Ecole des Beaux Arts, Paris. Mr. Lindsey went to New York in 1857 and was designer of the old French Theatre and of the Drexel Building, said to be the first building constructed in New York along fireproof lines. In the autumn of the same year he was appointed to fill the chair of applied arts, just then established at Princeton University, a position which he held until 1880, when his health failed. He later designed the present Consolidated Stock Exchange building in Broad Street, and during the last three years had devoted himself to lecturing and to gathering material for a book on the history of art.

At the last meeting of the City Court of Common Council it was resolved to spend £1,500 on works at the Mansion House. Only £745 of the cost is to fall in the present year. The City Lands Committee received authority to expend about £1,600 on sanitary work and the reconstruction of the drainage system at Corporation Buildings, Farringdon Road.

Our Office Table.

This notice has been sent this week to the exhibitors at the Royal Academy of Arts:—The president and council, after careful consideration, find that it will be impossible to hold the soirée this year without infringing the order of the Home Secretary, issued through the Commissioner of Police, with regard to lighted roof areas in London, and as a strict observance of this regulation has now become most urgent, they must forego the pleasure of receiving the exhibitors this summer as the guests of the Royal Academy.

The fourth biennial National Road Exhibition organised by the County Councils Association, in the Royal Horticultural Hall, Vincent Square, Westminster, was opened by Mr. Walter Long, President of the Local Government Board, on Friday afternoon. The exhibition, which closes to-morrow (Thursday) comprised materials used in road making, machinery, plant, and appliances for construction, and conferences are being held in the lecture hall. Mr. Long said he had observed with great satisfaction that there were exhibits closely connected with labour-saving operations. So far as traction and the use of roads were concerned, everything had entirely altered during the past twelve years. Horse-drawn vehicles were now, he was sorry to say, the exception. He appealed to users of the roads to remember that even as taxpayers they made an infinitesimal contribution to the cost of the roads compared to the damage they did by the particular vehicles they drove. We ought to consider the whole question of motor traffic and how it could be adequately dealt with when we were in quieter and happier times, to investigate the question and its close relation to the roads of the country. All developments of road-making were for the time being arrested.

At the National Road Conference on Monday a paper upon "The Use of Tar, Pitch, and Bitumen in the Construction and Maintenance of Roads" was submitted by Mr. Percy J. Sheldon, County Surveyor of Essex, and Mr. Alfred J. Lyddon, his deputy. A scheme of main county road reconstruction of 140 miles, spread over a period of five years, had been arranged between Essex and the Road Board at an estimated cost of half a million pounds. Started a year ago, the work has been retarded by the war. Mr. G. H. Jack, County Surveyor of Herefordshire, thought a difficulty would arise in agricultural districts, and he felt that such areas would have to receive special treatment from the Government, as the local rates could not meet the expense of the new roads. Mr. H. T. Wakelam, County Surveyor for Middlesex, said that in road-making they wanted something between ordinary macadam and wood paving. Wood paving was the best and cheapest paving that could be laid down if the traffic wanted it. In his county, although the road mileage had increased fifteen miles in the last eight years, tar-spraying had resulted in a saving of over £16,000 a year.

The Corporation of Liverpool having been compelled to suspend their housing schemes, a similar suspension of demolitions in certain areas was urged upon them on Friday afternoon, by the Property Owners and Ratepayers' Association. Alderman J. G. Taggart, who presided, pointed out that the proposal was recommended by the association's municipal committee. The corporation's hand in building had been stayed, and he thought that that should carry with it as a corollary that they should not put these people out of their cellars and dwellings and make the houses derelict and lay the spaces bare. The city surveyor's demand that leased property should be relinquished in the same condition as it was received was the subject of protest by the deputation. The corporation estate, said the chairman, would not be injured by this policy, because no one would take up a lease on these terms. He said a man knew the extent of his obligations, but now he would be compelled to spend a large sum of money, which had been unknown up to the present.

Two Heating Studentships, tenable in the Faculty of Engineering of University College, London, each of the value of £50 a year, together with £11 11s., being the amount of College fees, may be awarded in July by the Institution of Heating and Ventilating Engineering. Candidates must produce evidence that they have already pursued a course of engineering training and are familiar with the work of an engineering laboratory. The research students will be required to devote their whole time to research work in connection with heating and ventilating engineering. Full particulars can be obtained from the Secretary of University College, London, to whom applications must be made not later than Wednesday, July 7, 1915.

H.M. Trade Commissioner for New Zealand reports that, according to the local Press, a good deal of building activity is noticeable in the city of Auckland and its suburbs. Substantial houses are being built in several of the suburbs, and in Remuera especially architects have prepared plans for large dwellings, both in brick and wood, while a number of contracts are now on hand. Hotels are also responsible for a fair amount of building activity. The largest work in hand is an eight-story building, which will be used as an insurance office, and will cost over £60,000. Good progress is being made with a new grammar school building at Mount Eden, the contract price of which is £33,000. The construction of a large block of shops and offices, five stories high, was recently commenced. Several warehouses and other building schemes are being carried out in the vicinity of the water front.

Mr. Pavoni, the Acting British Vice-Consul at Poti, Transcaucasia, reports that the walnut and boxwood trade of Poti in 1914 was insignificant; large walnut trees in the well-known walnut wood growing districts are now scarce. The trees are far removed from the coast. First-class walnut timber has advanced in price to nearly double its value a year or two ago. A few large boxwood forests, situated along the Abkhazian coast, are still available for exploitation, but with the decreasing demand the trade is gradually declining in importance.

A recent patent by Mr. T. G. Park, Fassio Works, Argyle Place, Cromer Street, Gray's Inn Road, London, and Mr. F. R. Hill, Paxton House, Bath Road, Reading, relates to processes for making artificial marble. In one process, coloured cementitious fluid is poured into a mass of cementitious material without being mixed, and the combined mass is then poured in a succession of streams on to a polished surface and manipulated to modify the distribution of the colour, the product being backed with a thin layer of cement and subjected to pressure. Two or more coloured cementitious fluids may be separately poured into the cementitious mass so as to avoid intermingling of the colours. When making pilasters, moulding, etc., a smooth flexible sheet, such as moistened paper, is placed upon the polished surface to receive the cement, and a woven fabric is applied to the backing before it sets. The complete mass is then removed from the polished surface, and the flexible sheet from the moulded surface; the plastic mass is then transferred to a mould by means of the woven fabric, and a backing of cement is applied to the moulded marble. The figured face may be polished with spirit polish or putty powder (tin oxide). When it is desired to apply the artificial marble to walls, a canvas backing is employed. The product may be secured in position by means of a paste consisting of white lead, gold size, and Parian cement.

"Build now and save money" is the reiterated advice of the Royal Victorian Institute of Architects to their Australian fellow-citizens:—"Our trade is on a good and sound basis, failures are few, and credit is good, whilst the vast sums (viz., £81,246,890) to the credit of the depositors in the Victorian State Savings Bank is evidence of general prosperity. Since June 30 last the amount at the credit of depositors has increased by £1,557,092. We are of opinion, therefore, that now is the time to build, and our own experience strengthens us in that view. It is not that materials, as a whole, are cheaper than they were when war broke out. Some of the essential mate-

rials are certainly dearer. Labour is plentiful, and an employee knows full well just now that he has to earn his day's wage or he is quickly discharged. Labour troubles, it is suggested, would soon reappear if trade becomes normal. Trade, however, will require a very great stimulus before it reaches anything like normal conditions. In the meantime, we venture to prophesy that, at any rate for the immediate future, labour troubles—should they occur—will receive short shrift at the bar of public opinion. Since the war began we have seen men working on buildings with which we have been connected—and doubtless other architects can state similar experiences—at a rate which a year or so ago no workman would have dared to work at. We know, further, that where tenders were called for work before the war commenced, and such work was subsequently 'hung up,' the contractors are now perfectly willing to carry out the work at the figures they then submitted. If fresh tenders were called for the works we are now referring to, building owners would stand a good chance of saving. So we say, 'Build now and save money.'"

Correspondence.

REMOVING STAINS FROM STONEWORK AND POLISHING CONCRETE.

To the Editor of the BUILDING NEWS.

SIR,—The very practical article on page 659 of your issue of June 9 should be read by every stonemason and builder.

The first time I heard that Portland cement affected stone was when I delivered a lecture at Carpenters' Hall, London, a few years ago. I have since noticed façades of many large buildings that have been marred by Portland cement. The only comment I have to make to the author's good suggestions that lime mortar should be used to prevent such stains is that lime mortar is liable to be affected by frost following rain. Some important tests have been made by the British Government with Pudloed lime, and these tests resulted in a considerable advantage being given to the Pudloed lime joints.

I have also had freezing and thawing tests made by Messrs. Faija and Company, which prove conclusively the great advantage of Pudloed lime. I manufacture a special product for this purpose which I call lime Pudlo, which is used most extensively by many well-known diocesan architects and the British Government. I shall be glad to send readers full particulars and a booklet I have written on the subject. This product cannot be used for mixing with cement. I do not advertise it because the market is so very limited.

At the foot of the first column of page 681 of the same issue you make some remarks on polishing terrazzo work. Your readers will be interested to know that if a little "Cement-Pudlo" is added to the cement a more lasting polish is obtained. This polish will certainly stand much better in the atmosphere of cities. The ordinary polish is very unsuccessful because it loses its finish so soon. I should be glad to send a small sample of Pudlo to any reader of this paper for him to experiment with.—Yours faithfully,

J. H. KERNER-GREENWOOD.

King's Lynn.

Co-operative stores are being built in Upper Parliament Street, Nottingham. The architect is Mr. W. V. Betts, of Radford Road, Old Basford.

At Netherbarns, Galashiels, a Sanderson Memorial hospital of twenty beds is in course of erection. The architect is Mr. John Hall, of Ladhope Vale, Galashiels.

New girls' schools are about to be built at Reading for the Kendrick Trust at a cost of £17,100. Messrs. Charles Smith and Son, of Reading, are the architects.

The sewerage works at Kilkee have been finally inspected and approved by Mr. P. C. Cowan, chief engineering inspector for Ireland of the Local Government Board. Mr. P. H. McCarthy, B.E., of Dublin, prepared the plans, and the contractor was Mr. P. Dillon, of Limerick.

LEGAL INTELLIGENCE.

BUILDERS' APPEAL DISMISSED.—Justices Ridley and Shearman, in the King's Bench Divisional Court, on Thursday, dismissed an appeal by Messrs. Henry Lovatt, Limited, builders and contractors, Darlington Street, Wolverhampton, who asked the Court to set aside the award of an arbitrator in a dispute between them and Colonel Herbert Harrington Roberts. Mr. Compston, K.C., for the appellants, explained that the dispute arose in regard to the rebuilding of the Post Office in Fleet Street, E.C., and it came before Mr. Oswald K. Wylson, as arbitrator, last December. The arbitrator's award was for a sum of £427 against the builders, and their submission was that he not only exceeded his jurisdiction, but had decided the matter without sufficient inquiry. There appeared to have been some delay in the completion of the work, and the builders' case was that any delay was caused by strikes and labour difficulties. There was just an informal discussion (said counsel), and the appellants had no idea this constituted the hearing of the dispute. Without calling on counsel for the respondent, their Lordships dismissed the appeal with costs and confirmed the arbitrator's award.

HOUSE AGENTS AND TENANTS.—LIABILITY FOR RATES.—Judge Shand, at the Liverpool County Court on Monday, gave a considered judgment in a case concerning the right of a tenant to sue a house agent in respect of rates which she had been forced to pay by the rating authorities under a threat of distress, she having already paid the rates to the agent with the rent. The plaintiff was a widow named Mrs. Margaret Ann Moore, who as tenant of a house in Clifton Road, Tuebrook, Liverpool, sought to recover from Mr. William Caird, a Liverpool builder, and Messrs. Blundell and Curphey, estate agents, of North John Street, Liverpool, £3 15s. 3d., which she was compelled by the authorities to pay for certain rates and taxes, these being included in the weekly rent of 15s. 3d., which she paid to the defendants Blundell and Curphey under an agreement made with them when she took the house. His Honour found that the agreement for taking the house was made with Blundell and Curphey, plaintiff then believing Blundell and Curphey to be the owners of the house, and the rent-book had their name alone upon it. No written agreement of the tenancy was produced at the trial, and Mr. Blundell admitted that he never signed one. Even had he signed the agreement, said his Honour, in order to escape personal liability, it would be necessary that he should have stated that he, signed it as agent. In his judgment, the defendants Blundell and Curphey were personally liable to the plaintiff for the taxes she was compelled to pay, and there would be judgment for the plaintiff for £3 15s. 3d. and costs against Blundell and Curphey, and judgment for Caird without costs. Mr. Fisher (Haring, Fisher and Co.), who appeared for the defendants, asked his Honour for leave to appeal, but this was refused. Mr. E. H. Cooke appeared for the plaintiff.

DIVIDING FENCE DISPUTE.—At the Alfreton County Court, on Friday, John Holloway, of Ripley, claimed from the Ripley Co-operative Society £15 11s. damages for the removal of a fence, bricks, and soil from land belonging to the plaintiff. Mr. W. W. Shephard appeared for the plaintiff, and Dr. Tinsley Lindley for the society. It appeared that the parties had adjoining plots of land, and up to a certain period neither of them was aware who owned a boundary fence. Believing that they owned the land, the society pulled up the fence with the intention of erecting a wall. It then transpired that Holloway was the owner, and, seeing that they were in the wrong, the society erected a post and rail fence, and were prepared to erect a quickset fence, while a deputation offered to erect a further fence for protection. The plaintiff, however, took up the stand that they should erect a wall. This they refused to do, and as the case could not be adjusted they paid £6 10s. into court in full settlement. The plaintiff contended that the removal of the fence had depreciated his property, while the defendant society said that they had erected a far more preferable fence. His Honour said it was an unfortunate dispute, and should have been settled out of court. The fence was pulled down in complete ignorance of each other's rights, but the plaintiff was not entitled to anything more than the value of the depreciation to his property. He was satisfied the defendant society had granted the plaintiff a better fence, and he found the amount paid into court was ample. He ordered £6 10s. to be paid out of court to the plaintiff, but there would be no order as to costs.

PARLIAMENTARY NOTES.

THE LAND VALUE DUTIES.—Mr. Pollock, on Monday, asked the Chancellor of the Exchequer to give the amount of the return for 1914-15 of increment value duty, reversion duty, and undeveloped land duty respectively. Mr. McKenna: The net receipt of duty in the year 1914-15 was as follows:—Increment value duty, £48,316; reversion duty, £19,313; undeveloped land duty (arrears for previous years), £8,651.

PROFESSIONAL AND TRADE SOCIETIES.

THE QUANTITY SURVEYORS' ASSOCIATION, INCORPORATED.—Mr. Henry Vale, F.S.I., of Wolverhampton, has been elected President of this Association for the ensuing year, and Messrs. F. W. Harrison, F.S.I., and Arthur G. Cross, F.S.I., Vice-Presidents.

EDINBURGH ARCHITECTS VISIT MELVILLE CASTLE.—On Saturday week a large company of members and friends of the Edinburgh Architectural Association visited Melville Castle. This edifice, a castellated mansion with circular towers, designed by John Playfair, was built about 1776, and superseded an older mansion which was demolished. The proprietor of the estate in the 12th century was an Anglo-Norman baron named Maleville, whose line ended in an heiress who married Sir John Ross of Hawkhead in the time of King Robert II. The estate was held by the Ross family until 1705, when it was acquired by Captain David Rannie, whose daughter married Henry Dundas, created Viscount Melville in 1802. The party was conducted over the public rooms by Lord and Lady Melville, who pointed out and described the many interesting trophies and artistic objects which they contain, one being a shepherd's plaid presented to the first Viscount by Sir Walter Scott. A striking feature of the Castle is the finely proportioned staircase with its painted ceiling.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.—The Architect to the Derbyshire Education Committee, Mr. G. H. Widdows, F.R.I.B.A., invited the members on Thursday, June 24, to view the Secondary Schools at Ilkeston. The party numbered about thirty, and included two Belgian architects at present in England. Mr. Widdows conducted the party over the building, pointing out the special points in the planning in order to obtain thorough ventilation without draughts and efficient lighting in every part of the class rooms. The plan and general arrangement of these schools is well known, and a visitor cannot but be impressed with the cheerful and orderly appearance of the whole of the buildings. Even the class rooms have their own individuality in the finish of the decoration on the walls, and the fittings throughout have been selected with a view to use and convenience. The headmaster's room is in telephonic communication with all the class rooms. The central hall in the quadrangle is well designed, and constitutes an attractive centre-piece. The president of the society, Mr. Harry Gill, thanked Mr. Widdows for inviting them over and so willingly describing what they had seen and also for so kindly inviting them to take tea with him. Mr. Watkins, vice-president, endorsed this, and in his reply Mr. Widdows invited the society to visit some of his later schools, which possessed unusual features. Several of the members afterwards visited the parish church, where, in the absence of Mr. Widdows, Mr. Harry Gill explained the interesting architectural features.

ASSOCIATION OF MANAGERS OF SEWAGE DISPOSAL WORKS.—The annual summer conference of the Association of Managers of Sewage Disposal Works will be held at Leeds on Saturday in next week, July 10, at 10.30 a.m. Dr. H. Maclean Wilson, M.D., B.Sc., will deliver his presidential address. Mr. Geo. A. Hart, M.Inst.C.E., will give an explanation of the works included in the main drainage and sewage disposal scheme, illustrated by cartoons. Mr. John T. Thompson, M.Sc., will read a paper, "Seven Years' Experience with a Large Sludge Pressing Plant." A visit to the Leeds sewage disposal works will follow.

MEETINGS FOR THE ENSUING WEEK

WEDNESDAY (To-day).—Royal Archeological Institute, "Was the Anglo-Saxon an Artist?" by Professor G. Baldwin Brown. Society of Antiquaries' Rooms, Burlington House, W. 4.30 p.m.

FRIDAY.—Institution of Municipal Engineers Council Meeting, to be followed by Smoking Concert. Mitre Hotel, Manchester. 7 p.m.

SATURDAY.—Manchester Meeting of Institution of Municipal Engineers. Visit to the Ashton-under-Lyne, Stalybridge, and Dukinfield Waterworks. By train from Exchange Station, Manchester. 1.55 p.m.

MONDAY.—Royal Institute of British Architects. Special Meeting to consider Amendments to Regulations for Architectural Competitions. 8 p.m.

TO ARMS!

Central London Regiment Volunteers.
4th Battalion "Architects."

RECRUITING.

Recruits are urgently needed for the Regulars, Territorials, and Volunteers. Intending recruits should apply to the Battalion Headquarters, where they will be advised as to the branch of the service for which they are best suited.

ORDERS FOR THE WEEK BY

Lieut.-Col. A. W. Warden.

24.—MUNITION WORK.

Members able to give assistance at week-ends should send their names at once to the Adjutant's Office.

SPECIAL PARADE.

All members volunteering for Munitions Work will parade at Dean's Yard, Wednesday, 30th inst., at 6.30 p.m., for division into shifts. Absentees will be posted to shifts found most convenient.

GENERAL PARADE.

Saturday, July 3. Members not detailed for Munion Work at Thames Ditton parade at Boreham Wood, Elstree, at 3.20 p.m.

285.—DRILLS AND PARADES.
"A" Coy.—Tuesday, Miniature Range, Gas Light and Coke Co.'s premises, Monck Street, Westminster, 5 to 8.30 p.m.

School of Arms and Signalling, Millbank School, Erasmus Street, Westminster, 6 to 8 p.m.

Wednesday, Company Parades, 5.15 to 7.15 and 6.15 to 8.15, at Dean's Yard, Westminster. If wet, these parades will be held at Millbank School. Notice will be posted in vestibule at Headquarters.

Note.—There will be no Company Parades on Fridays at Dean's Yard until further notice. For Recruit Drills see below.

Thursdays, Signalling in Hyde Park, 6 to 8 p.m.

Meeting at Marble Arch, 6 p.m.

"B" Coy.—Miniature Range and Coy. Parade as for "A" Coy. See Orders at Local Headquarters.

"D" Coy. Platoon and Section Drill at Mercer's School, Holborn, Tuesdays and Thursdays, 6.45 p.m. Coy. Parades, Wednesdays, at Dean's Yard.

RECRUIT DRILLS.

"A" Coy.—Dean's Yard, 5.15 to 7.15 and 6.15 to 8.15, Wednesdays and Fridays.

"B" Coy.—Dulwich College, Mondays, 8 to 10; Thursdays, 6 to 8 p.m.

"C" Coy.—Now being formed. Drill Ground and Miniature Range, Central Electric Supply Co.'s Generating Station, Lodge Road, St. John's Wood, N.W.

"D" Coy.—Mercer's School, Tuesdays and Thursdays, 6.45 p.m.

286.—SCHOOL OF ARMS.

Millbank School. Instruction in bayonet fighting, gymnastics, physical drill, boxing, and single sticks, on Tuesdays from 6 to 8 p.m.

287.—TRANSPORT SECTION.

Names are required of a few members to be specially trained in Transport Work. Applications should be made to the Adjutant's Office.

288.—COMMITTEE MEETING.

A meeting of the Civil and Military Committees is called for 7.15 p.m., Wednesday, 30th inst., at Battalion Headquarters. A full attendance is requested.

Battalion Headquarters, 18, Tufton Street, Westminster, S.W.

By Order. L. R. GUTHRIE, Adjutant.

Privy Counsellor Rathenau, general manager of the Berlin Allgemeine Elektrizitäts Gesellschaft (A. E. G.), died on Monday in last week at Berlin, aged seventy-six. Thirty years ago Emil Rathenau founded the Allgemeine Elektrizitäts Gesellschaft with a capital of £250,000; to-day the company's interests in various parts of the world are valued at £200,000,000. Of Jewish birth, he was entirely self-made, and probably did more than any other one man to build up Germany's industrial power.

In the *R.I.B.A. Journal* is published the thirtieth list of Members, Licentiates, and Students who have enlisted for the war, the total to date being 41 Fellows, 292 Associates, 139 Licentiates, 2 Hon. Associates, and 171 Students. We are glad to hear that Lieut. Kenneth Dalgliesh, A.R.I.B.A., of 165, Fenchurch Street, E.C., who miraculously escaped a mortal wound while in charge of an advanced post on the Messines Ridge, but was still so badly injured that he had to have his arm amputated, is making such good recovery that he has left the hospital at Boulogne, and was able to visit the Institute a few days ago.

CHIPS.

Mr. N. McK. Barron, assistant sanitary engineer, is appointed sanitary engineer to the Government of Bihar and Crissa.

A sanatorium is about to be built at Ballymalye for the Ennis Management Committee. The architect is Mr. C. E. Allen, of Ennis.

The joint committee of the Mullingar Lunatic Asylum have decided to expend £5,500 on a sewage scheme, and £1,156 on water supply.

The town council of Ilkeston have received the sanction of the Local Government Board to a loan of £7,354 for the completion of their sewerage scheme.

The Beverley Town Council have appointed Mr. C. S. Harrison, of the borough surveyor's office, Bridlington, as assistant borough surveyor of Beverley.

At an adjourned meeting of the city council of Bath, held the other day, it was decided to expend £6,860 upon the Pump Room and the New Royal Baths.

The Local Government Board has sanctioned a loan of £2,787 to the urban district council of Paignton, for the extension and furnishing of the isolation hospital.

Messrs. McLaughlin and Hulsken, architects, Lima, Ohio, have been selected to prepare plans for the new court-house to be erected at Portland, Ind., at a cost of \$275,000.

Mr. John Christopher Whiteley, assistant manager of the Chatham and District Light Railways Co., has been appointed tramways manager to the South Shields Corporation.

Mr. T. Huddleston, surveyor to the Grange Urban District Council, has had his salary increased from £250 to £275 a year. Out of his salary Mr. Huddleston has to pay a clerk £40 a year.

The Zion Hill Convent, Blackrock, County Dublin, is being extensively enlarged from plans by Mr. Charles B. Powell, architect, of Rathmines, Dublin. The contractor is Mr. M. J. Greene, of Donnybrook.

Mr. A. W. Brightmore has held a Local Government Board inquiry at Rugby into the application of the Rugby Rural District Council to borrow £1,000 for works of sewage disposal near the village of Dunchurch.

The urban district council of Caerphilly are about to build forty-four workmen's dwellings at Penysheol, to be let at 7s. 2d. per week inclusive. Mr. Sidney Wilkins is the architect, and the cost is estimated at £9,800.

Mr. Robert Lee, sewage works manager to the Ramsbottom Urban District Council, has been granted an honorarium of £50 for extra services rendered in regard to various contracts carried out in the past two or three years.

An inquiry was held at Ellesmere Port the other day before Mr. W. O. E. Meade King into an application to the Local Government Board by the urban district council for sanction to borrow £5,500 for the erection of council offices.

Additions and alterations have been carried out at the Durham County Hospital. The work, including a new hostel for nurses and an operating theatre, has been designed and supervised by Messrs. Newcombe and Newcombe, architects, Newcastle-on-Tyne.

New buildings for the nursing staff at the Royal Victoria Hospital, Dover, have been formally opened. The work was carried out by Mr. R. W. Paramor from plans prepared by Mr. F. G. Hayward, of Messrs. Worsfold and Hayward. The cost was £3,000.

A council school at Cullin, built for the North Education Committee at a cost of £6,697, has been formally opened. Mr. L. M. Jones, of Nottingham, the county architect, prepared the plans, and Mr. H. Greenwood, of Mansfield, was the builder.

An important street improvement is being effected by the corporation of Bristol in the demolition of the remaining properties on the island at the junction of Rupert Street and Christmas Street, near the centre of the city. The entire site occupied by the island will be levelled, asphalted, and thrown into the thoroughfares as an open space.

The Memorial of Brighton dedicated to public use on Thursday, a clock tower erected in Queen's Park, under the bequest of the late Mr. W. O. Godley, who left £1,000 for the purpose. The tower is of Portland stone, and is a fine example of a design by Mr. Llewellyn E. Williams, A.R.I.B.A., of Coleman Street, E.C., selected in a competition in which sixty plans were submitted, and illustrated in our issue of April 10, 1914.

The Duchess of Somerset on Monday opened the new buildings of the Wyndham-Ashley Children's Mission of the Shaftesbury Society and Ragged School Union in Regency Street, Westminster.

Great Marlborough Street Police Court, rebuilt on the site of the old court, which dated from 1820, was used on Monday for the first time. It has been built from plans by Mr. J. Dixon Butler, F.R.I.B.A., architect to the Metropolitan Police Force.

The Local Government Board have sanctioned the appointment of Mr. J. H. Thompson as substitute for Mr. J. L. Peacocke, town surveyor of Newtownards, who is now a lieutenant with the 150th Field Company at Antrim.

A new church at Taur, near Newmarket, Co. Cork, was dedicated last week. It is Early English in style, and is built of local limestone, the external dimensions being 70 ft. by 31 ft. The architect was Mr. Hynes, South Mall, Cork, and the builder Mr. Coffey, of Middleton, Co. Cork.

There has been placed in position on the wall of the house at 67, High-street (Cross), Linlithgow, where Dr. David Waldie, a pioneer in anæsthetic research, resided and had his laboratory, a bronze portrait medallion tablet bearing an inscription. The sculptor was Mr. H. R. Hope-Pinker, of Kensington.

At their meeting to-morrow (Thursday) the City of London Corporation will receive a report from the Bridge House Estates Committee on an application of the London County Council for permission to lay a third tramway track on the south side of Blackfriars Bridge, and recommending that the application be complied with.

Mr. J. W. Canning, manager of the gasworks at Newport, Mon., has been appointed by the High Explosives Committee to organise and direct the work of providing high explosives material in Wales and Monmouthshire. He will be assisted by a committee of five gas engineers selected from the Wales and Monmouthshire Institution of Gas Engineers.

The newly formed Mitcham Urban District Council have made the following appointments:—Clerk, Major Stephen Chart, of Mitcham; salary £250, rising to £300 a year. Assistant clerk, Mr. Charles H. Parslow, of Mitcham; salary £120, rising to £150 a year. Surveyor, Mr. Burnett Bullock, of Mitcham; salary £250, rising to £300 a year. Sanitary inspector, Mr. Charles G. Rabbetts, of Mitcham; salary £200 a year.

The Bishop of Southwark dedicated at St. Peter's Church, Brockley, on Monday evening three stained-glass windows, representing "St. Peter preaching at Pentecost," "St. Paul preaching at Athens," and "St. Augustine preaching before King Ethelbert," and a brass over the pulpit as memorials to the late Rev. C. Henry Grundy, who was vicar of the parish from 1887 to 1914, and who was killed in a cycling accident.

The first stage of the revaluation of the City by the Corporation as overseers is now completed. It shows a gross value of £7,122,119 and a rateable value of £5,960,368, being an increase on the previous lists of £247,300 and £199,663 respectively. This increase is mainly due to the fact that, in addition to the large amount of rebuilding, the Corporation have now a much fuller knowledge of the circumstances and value of all classes of property in the City.

On the site of No. 71, New Bond Street, W., is to be erected an imposing new building of five floors. The elevation will be carried out up to first floor cornice in Sicilian marble, with sculptured figures surmounting the two pilasters. Above, the elevation will be of Portland stone moulded and enriched with carving, finishing with a domed roof and finial. The architects are Messrs. Palgrave and Co., who are also concerned in the adjoining buildings now being erected, and the contractors are Messrs. A. J. Staines and Co., Limited, Great Titchfield Street, W.

The new Duchess of Connaught Canadian Red Cross Hospital on Major Astor's estate at Cliveden, near Taplow, will shortly be opened for the reception of wounded soldiers. It will afford accommodation for a thousand patients. It has been erected according to plans prepared by Mr. Charles F. Skipper, of Cambridge, under the direction of Colonel C. A. Hodgerts, the Commissioner of the Canadian Red Cross Society in London. The hospital, which is a temporary structure, consists of a series of one-story buildings, so placed as to receive the maximum amount of sunshine.

LATEST PRICES.

N.B.—All prices must be regarded as merely approximate for the present, as our usual sources of information are in many cases failing us.

TIMBER.

Owing to stoppage of supplies all prices have advanced considerably.

IRON.

	Per ton.	Per ton.
Rolled Steel Joists, English.....	£9 12 6 to	£9 17 6
Wrought-Iron Girder Plates	9 15 0 "	10 0 0
Steel Girder Plates	9 15 0 "	9 17 6
Bar Iron, good Staffs	6 5 0 "	8 10 0
Do., Lowmoor, Flat, Round, or Square	22 0 0 "	0 0 0
Do., Welsh	5 15 0 "	5 17 0
Boiler Plates, Iron—		
South Staffs	8 0 0 "	8 15 0
Best Sneedhill	9 0 0 "	9 10 0
Angles, 10s., Tees 20s., per ton extra.		
Bullders' Hoop Iron, for bonding, £12 5s. to £12 15s.		
Ditto galvanised, £19 to £19 10s. per ton.		
Galvanised Corrugated Sheet Iron—		

	No. 18 to 20.	No. 22 to 24.
6ft. to 8ft. long, inclusive gauge	£13 0 0	£13 10 0
Best ditto	13 10 0	14 0 0
Cast-Iron Columns	£6 17 6 to	£8 10 0
Cast-Iron Stanchions	6 17 6 "	8 10 0
Rolled-Iron Fencing Wire	8 5 0 "	8 10 0
Rolled-Steel Fencing Wire	7 5 0 "	7 10 0
Galvanised	8 15 0 "	6 5 0
Cast-Iron Sash Weights	6 0 0 "	6 5 0
Cut Floor Brads	10 15 0 "	—
Corrugated Iron, 24 gauge	16 0 0 "	—
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14 5 0 "	—

	0 to 8	9	10	11	12	B.W.G.
B.B. Drawn Telegraph Wire, Galvanised—						
£10 10s. £10 15s. £11 0s. £11 5s. £11 15s. per ton.						

	£6 15 0 to	£7 2 6
Cast-Iron Socket Pipes—		
3 in. diameter	6 10 0	6 12 6
4 in. to 6 in.	6 17 6	7 2 6
7 in. to 24 in. (all sizes) ..	6 17 6	7 2 6
[Coated with composition, 5s. 6d. per ton extra.]		
Turned and bored joints, 5s. per ton extra.]		

	Per ton.
Iron—	
Cold Blast, Lillieshall	80s. 0d. to 127s. 6d.
Hot Blast, ditto	87s. 0d. " 97s. 0d.
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—	
Gas-Tubes	67½ pc.
Water-Tubes	66½ "
Steam-Tubes	60 "
Galvanised Gas-Tubes	55 "
Galvanised Water-Tubes	51½ "
Galvanised Steam-Tubes	45 "

OTHER METALS.

	Per ton.	Per ton.
Lead Water Pipe, Town	£14 0 0 to	—
" Country	35 0 0 "	—
Lead Barrel Pipe, Town	35 0 0 "	—
" Country	36 0 0 "	—
Lead Pipe, Tinned inside, Town ..	37 0 0 "	—
" Country	37 0 0 "	—
Lead Pipe, tinned inside and outside	38 10 0 "	—
" Town	39 10 0 "	—
" Country	37 0 0 "	—
Composition Gas-Pipe, Town ..	38 0 0 "	—
" Country	38 0 0 "	—
Lead Soil-pipe (up to 4 in.) Town ..	34 0 0 "	—
" Country	35 0 0 "	—
" [Overlaid, £1 per ton extra.]		
Lead, Common Brands	17 17 6 "	£18 12 6
Lead Shot, in 28lb. bags	24 15 0 "	—
Copper sheets, sheathing rods ..	102 0 0 "	103 0 0
Copper, British Cake and Ingot ..	90 10 0 "	91 10 0
Tin, English Ingots	162 0 0 "	163 0 0
Do., Bas	163 0 0 "	164 0 0
Pig Lead, in 14wt. Pigs, Town ..	23 0 0 "	24 0 0
Sheet Lead, Town	33 10 0 "	—
" Country	34 10 0 "	—
Genuine White Lead	37 10 0 "	—
Refined Red Lead	31 0 0 "	—
Sheet Zinc	115 0 0 "	—
Old Lead, against account	23 0 0 "	—
Tin	9 10 0 "	—
Cut nails (per cwt. basis, ordinary brand)	0 14 0 "	—

* For 5 cwt. lots and upwards.

SLATES.

	in.	in.	£ s. d.	per 1,000 of
Blue PortmaDoc	20	10	12 12 6	1,200 at r. sta.
"	16	8	6 12 6	" "
Blue Bangor	20	10	13 2 6	" "
"	20	12	13 17 6	" "
First quality	20	10	13 0 0	" "
"	20	12	13 15 0	" "
"	16	8	7 5 0	" "
Eureka unfading green	20	10	15 17 6	" "
"	20	12	18 7 6	" "
"	18	10	13 5 0	" "
"	16	8	10 5 0	" "
Permanent Green	20	10	11 12 6	" "
"	18	10	9 12 6	" "
"	16	8	6 12 6	" "

